FEBRUARY 1, 1958
VOL. 154 — NO. 5

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

TRAINING LINEMEN

At U. S. Army Signal Training Center, Fort Gordon, Ga., student telephone linemen train atop poles by passing basketballs, thus acquiring "feel" of safety belts and "sky-hooks" in their unaccustomed aerial positions.

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Yours truly,

Lucian W. Spencer

Lucian W. Spencer
President

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February 1, 1958

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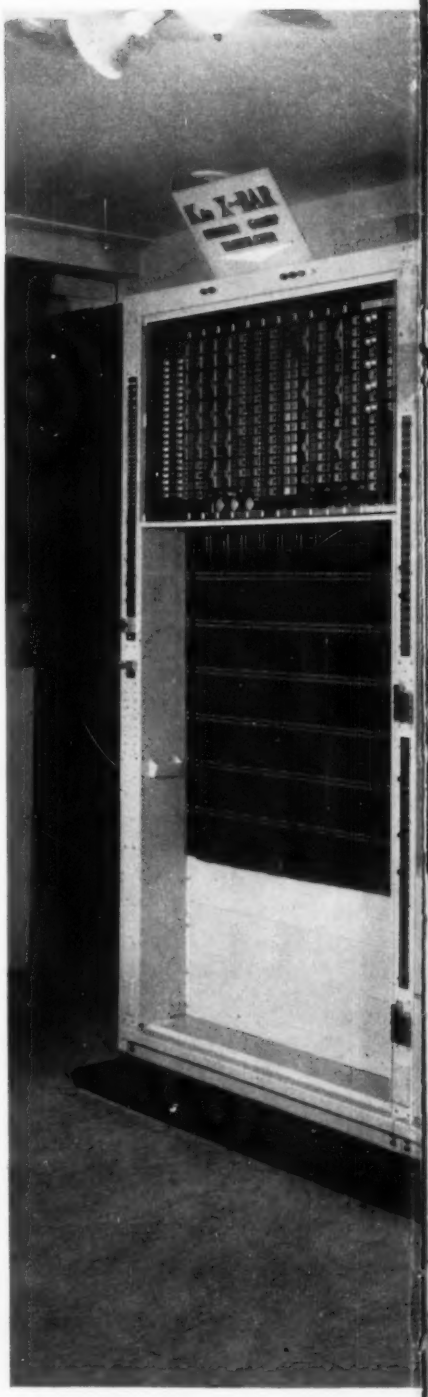
Very truly yours,

D. H. DEAVER
President



The REALLY BIG Advance in CROSSBAR SWITCHING!

"Star" of the U.S.I.T.A. Convention was the new K-60 Crossbar Switching System—the biggest advance in automatic switching for independent telephony. This new Kellogg development offers *full terminal-per-station efficiency with terminal-per-line type of equipment.* And, it can be engineered for any size system from small community dial offices to large metropolitan exchanges with maximum operational savings.

The efficiency of the new K-60 is achieved through the use of registers and full-station translator bays. The registers completely control dial selections on a stage-by-stage basis and accept up to 14 digits for nation-wide toll dialing. In the translators, subscriber assignments are made by inserting rectifiers in a matrix associated with each telephone number, thus eliminating major soldering changes on the main frame.

SOME OF THE EXCLUSIVE K-60 FEATURES

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- **Conversation timing on revertive calls.**
- **Any telephone arrangeable for joint party release, thus permitting the tracing of malicious calls.**
- **Detects trouble—locks trouble-path and blocks from future calls until correction is made.**
- **Simplified main distributing frame utilizing a 2-conductor jumper per line.**
- **100% Intercept facilities.**
- **PBX groups may be spread over entire office—eliminating need for high traffic connector group.**
- **No charge assignment on specific lines such as Police and Fire.**
- **Toll access restriction by 10-line groups.**

Call your Kellogg representative and let him show you how these and the many other features of the new K-60 Crossbar Switching System can bring new and better service to your subscribers at the minimum cost.

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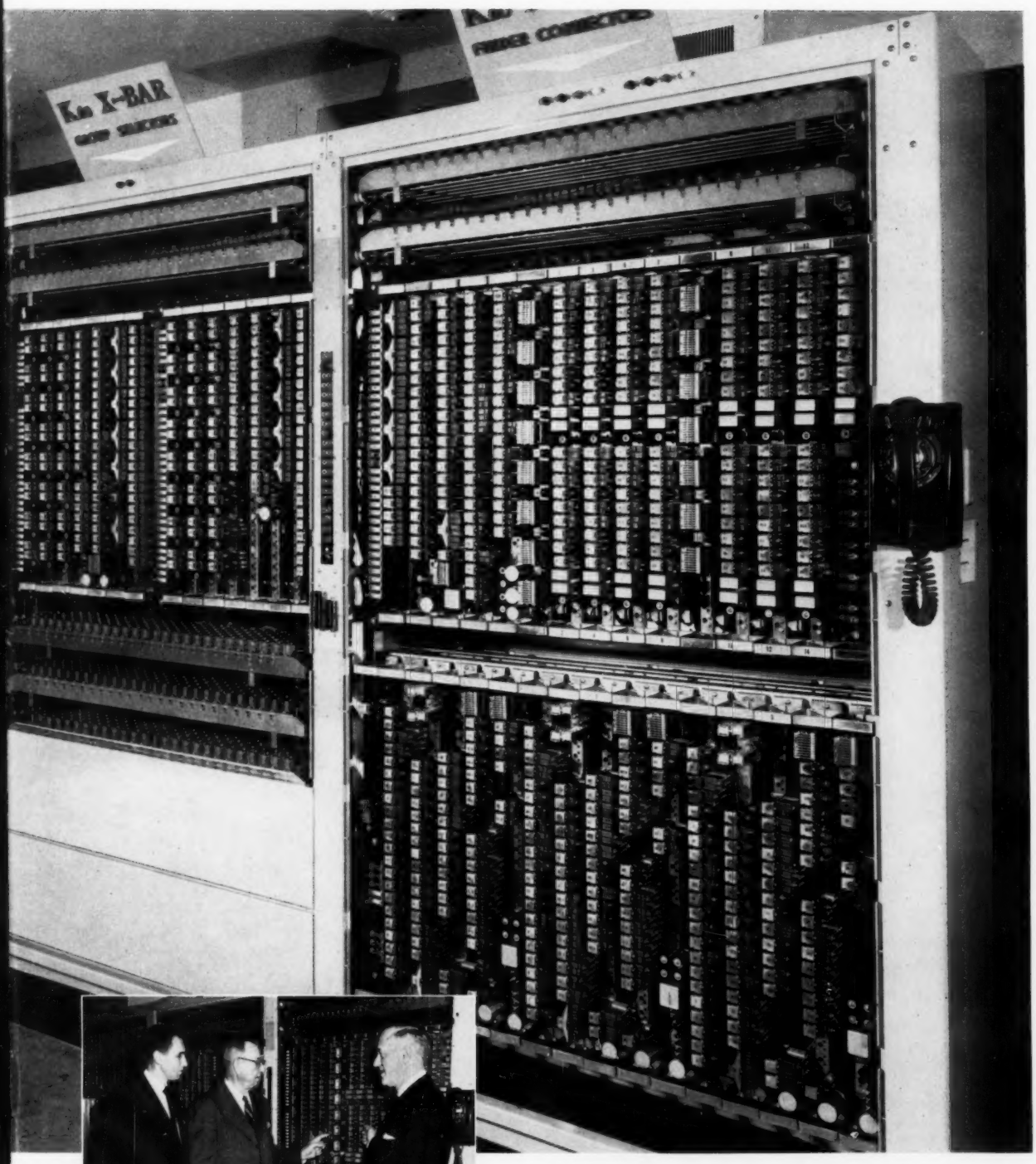

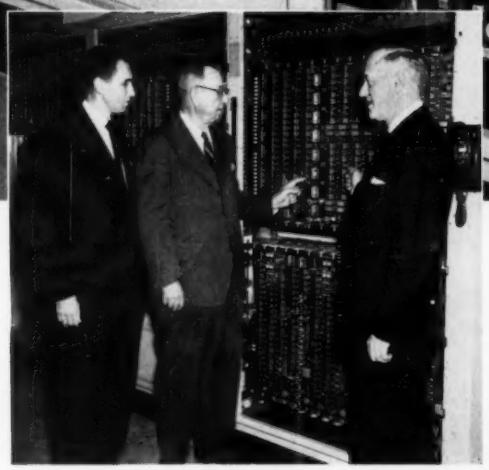

The K-60 Crossbar Switching System was introduced in this display at the U.S.I.T.A. Convention. This new unit reduces floor space requirements of previous crossbar equipment by 30%.

Among many distinguished visitors expressing interest in the new K-60 was Mr. S. A. "Gus" Lane, President of the Western Arkansas Telephone Company, Russellville, Arkansas. Mr. Lane (center) was shown the systems' many outstanding features by G. T. Scharffenberger (left), President, and W. P. Hollis, Vice President, of Kellogg Switchboard and Supply Company.

FLASHES AND PLUGS

SHE TOLD THE TRUTH. Police in Prescott, Ariz. probed too deeply on one case.

A woman telephoned to report that weather and use had worn two large holes in the pavement in front of her house.

A policeman went to the scene and soon radioed for a wrecker to pull his police car from one of the holes.

•

NORMAL REACTION. A woman called the information office of her local telephone company to find out the number of a particular store.

As she waited for the operator, she got her pencil and paper ready to jot down the number.

The operator said, "Madame, the number you want is Capital 3-2876.

The woman paused for a moment, and then asked: "How do you make a capital 3?"

•

MINOR MISTAKE. Ernest Ashwick, Geneva correspondent for *The London Daily Express*, was in a hurry to call his home office from the Swiss city. He found himself instead connected with a London manhole.

"I am a telephone engineer in a manhole in the Strand working on intercontinental lines," the man at the other end said.

The engineer explained to Mr. Ashwick that the exchange had gotten its wires crossed.

•

NEEDS NO EXPLANATION. As we all know, telephone operators often use codes as they talk back and forth to each other in handling long distance calls.

An operator will say, "DA," meaning "doesn't answer," or "BY" which means the number is "busy."

Telephone Lines reports that one inventive operator, in a town serving a rural community, came up with a new code.

"The number you want is OMC," she told the operator at the other end of the line.

"What's OMC?" the confused girl asked.

"Out milking cows."

•

HUNTING WHAT? An excited woman telephoned the Wisconsin Humane society, according to the *Milwaukee Journal*.

"Send somebody out quick!" she said. There's a baby moose on our front lawn."

"How do you know it's a moose?" the man asked.

"My husband says so," she said. "He ought to know. He's been hunting for 20 years."

The humane society man went out on the call. Found a woodchuck.

CHANGE OF ADDRESS

Please notify your local postmaster and the Circulation Dept. of TELEPHONY of change of address. Change cannot be made without the old as well as the new address. Allow three weeks for change of address to become effective.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
Since 1904

February 1, 1958

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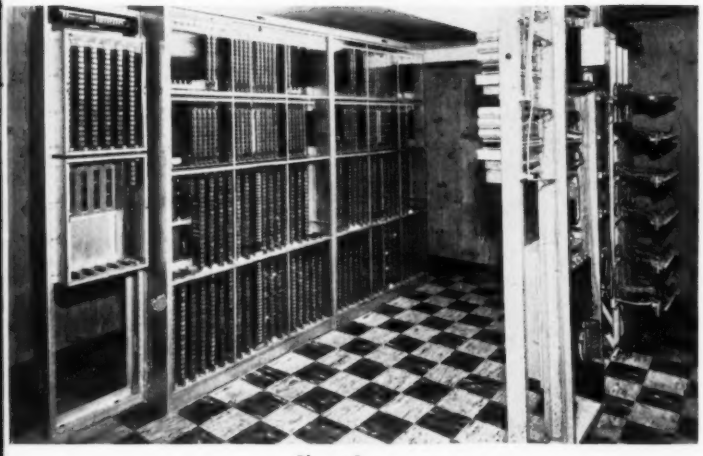

Sloan, Iowa

The first Leich Dial System was installed in Iowa in 1948. Installation has followed installation until today there are 46 exchanges using Leich Dial Systems.

Here's why these Iowa exchanges have decided Leich was the best bet for fast, profitable conversion to dial switching.

For example, the Leich Dial System is economical. It's an all-relay dial switchboard. It eliminates elaborate mechanical switching mechanisms that wear and require adjustment. Maintenance costs stay low.

Expansion is easy. Your own switchboard man can jack-in 10 lines in 15 seconds. You don't have to pay for factory installers, soldering, and wiring. The only expense is the cost of the equipment you add — only $172.90 for a 10 line relay bar.

Write for the Leich Dial System catalog which gives you the complete story. Ask for a quotation if you wish. There's no obligation.

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The rugged weather resistant vinyl insulation over the conductors is fully color coded. This construction, designed for block distribution, serves best where low cost rather than low attenuation is the prime consideration. Available in #24 AWG with 6, 11, or 16 pairs.

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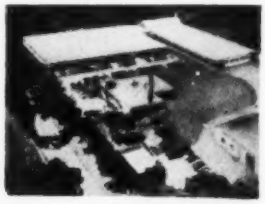

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10 reasons why

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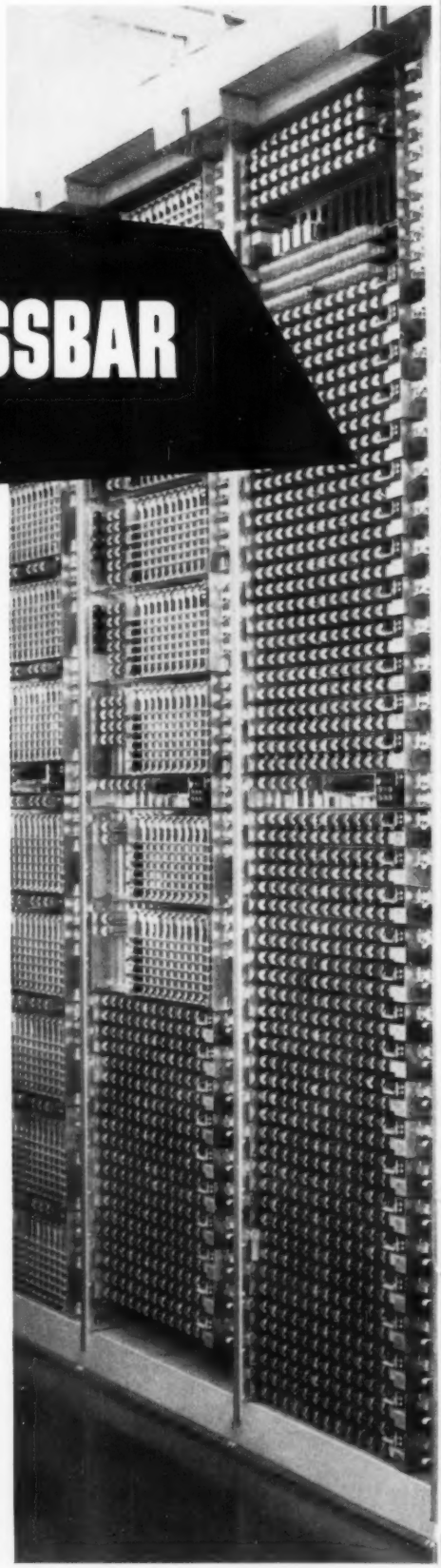
is the most advanced switching system available to the telephone industry...



1. Can search over as many as 80 trunks on any call, assuring a high degree of trunk availability.
2. Can route calls on a "2-5" basis without use of inter-toll directing codes.
3. Can "spill forward" as many of the "2-5" digits as necessary. Alternate routing can be provided wherever desired without additional equipment.
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6. A single switching train accommodates toll calls and test calls, providing features appropriate to each type of call.
7. All senders arranged to send digital information by means of dial pulses at 10 or 20 pulses per second or multi-frequency at 7 digits per second, according to trunk requirements.
8. The above types of digital information may be transmitted over any incoming trunk.
9. All the routing and handling equipment for Direct Distance Dialing is part of the standard Central Office Equipment.
10. Reduces requirements for toll board multiples by using a universal toll switching trunk group permitting standardized operating procedures for toll call placement requiring minimum reference to routing bulletins, substantially reducing operator's time and cost.

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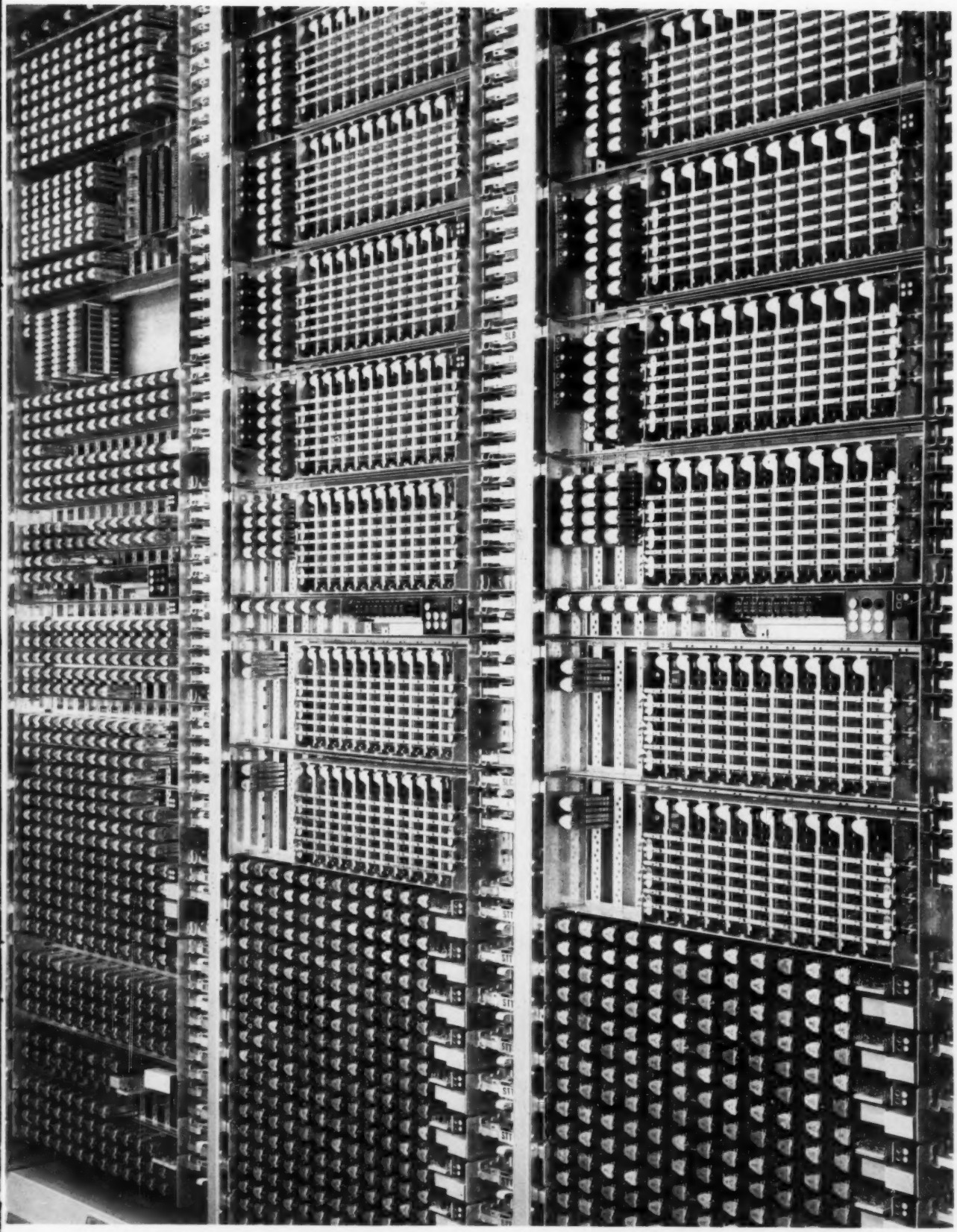

Q When is a bumbershoot a fizzle in a drizzle?

A When you have to make a telephone call outdoors!

But there's absolutely no question about Sherron steel outdoor telephone booths. Patrons and facilities are *completely protected* at all times . . . in all weather . . . in all seasons. Both are safe and dry – *all-ways*. Sherron booths protect conversations as well – keep them strictly private and free from distracting outside noises. Well-illuminated, attractive in a way to inspire respect, Sherron booths discourage abuse. Sherron booths are continuous revenue producers, inviting patronage, rain or shine. . . . Consult your Sherron distributor – or write us for technical data.

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IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

Dataphone described to Economic Club of New York by F. R. Kappel, AT&T president. Report of House sub-committee investigating FCC and other commissions leaked to "favorite" newspapers and columnists. CWA indicates it will ask for role in telephone rate regulation.

LAST MONTH before the Economic Club of New York, Frederick R. Kappel, president of the American Telephone & Telegraph Co., gave an interesting description and illustration of the new Dataphone service. This is the service for which tariffs have already been filed with the Federal Communications Commission for a limited trial on toll circuits between any two points in four states: Illinois, Michigan, New York, and California.

Advantage of the new service will be telephone message transmission 10 times faster than a man can speak. The technique involves electronic transmission of digital signals at the rate of 600 "bits" per second (equivalent to 800 words a minute).

It has been nearly two years since this writer, in this department, first noted the possibilities of commercial uses of digital signals for rapid message transmission along telephone facilities. These, of course, had already been announced and were already in the works at that time. They had, in fact, been under study for a number of years in telephone research laboratories and other communication research centers, such as the Naval Reserve Laboratory in Washington, D. C. (That is where this writer first came across a practical demonstration.)

The new Bell System service includes the use of a "Dataphone." This instrument codifies conventional messages into binary or digital signals known as "bits," which can be sent by a telephone wire at the very high speed mentioned. At the terminal point the digital signals can be decodified by a Dataphone into conventional message form. The filed FCC tariffs for the four Bell companies involved noted that "the regulations and rates for each call made for the purpose of transmitting digital signals are those applicable for message toll telephone station-to-station and person-to-person services according to the connection established."

As demonstrated by Mr. Kappel before the Economic Club, one clerk appeared to call another clerk and to transmit data over a regular telephone circuit. The Dataphone instrument is associated with the telephone and can be used in the usual way with either local or long distance service. When Mr. Kappel pushed the button, the Dataphone instrument accepted electric impulses from data-producing machines and sent them over an ordinary telephone connection. On the other end, his listeners heard the tones converted back to impulses which reproduced the data.

The demonstration call lasted only 20 seconds. But, the information sent was equivalent to the inventory position of 150 items in a super market. In this way, the manager of a super market stocking some 7,000 items could send an inventory report to headquarters, via the telephone, in 16 minutes. The inventory list in ordinary form would be 194 feet long.

The four Bell companies involved are the Illinois Bell, Michigan Bell, and New York Telephone companies, and the Pacific Telephone & Telegraph Co. (for California only). These companies have also filed tariffs with their respective state commissions covering the leasing of the Dataphone instrument and other customer equipment made available by the telephone companies.

The Dataphone subset, the tariff points out, "is required to convert signals generated by data and teletypewriter equipment to signals suitable for transmission on telephone company facilities and to convert signals received from telephone company facilities for delivery to data and teletypewriter equipment."

Mr. Kappel's address to the Economic Club also included a description of "wave guides" and pulse modulation techniques. He predicted that the use of such equipment would enable the telephone industry to magnify, by many times, the traffic capacity of present telephone transmission facilities not only on long distance but also over local plant facilities.

Investigation by Leakage

The late Sen. Joseph R. McCarthy of Wisconsin may be turning over in his grave at the techniques now being used to investigate the Federal Communications Commission and other regulatory commissions. It will be recalled that McCarthy was criticized and eventually censured by the Senate for abuse of investigating powers involving unproven charges or evidence of alleged disloyalty on the part of government officials and others. But, at least McCarthy acted with the ostensible authority of his committee, although it was sometimes a one-man committee.

The special House sub-committee investigating regulatory agencies, headed by Representative Moulder (D., Mo.), goes McCarthy one better. The sub-committee staff first accumulates a lot of charges and makes a report. The sub-committee then may decide *not* to release the report, pending further

verification or analysis. But, somehow the contents of the report, in a few thousand well-chosen words, are leaked verbatim out the back door of the committee. Somehow, these choice bits get into the hands of newspapers and sympathetic newspaper columnists who have had it in for the FCC and its policies for a long time. Thereupon, the charges appear in black and white the very next day in certain newspapers.

It does not seem to make much difference at that point whether the full House Interstate and Foreign Commerce Committee releases the report or not. In this case, the House subcommittee decided, as of Jan. 29, not to release the report. But, by that time everybody in Washington who could read, and some who only understand cartoon pictures, got the general idea that there was some chiseling and free-loading going on at the FCC.

At a closed meeting on Jan. 23, which lasted all afternoon, the nine members of the Special Sub-committee on Legislative Oversight agreed "unanimously" that the confidential staff document should remain "secret," though most of it had been in the selected newspapers. Representative Moulder said that members of his group felt that to make the 28-page bill of particulars available to the press generally would put the sub-committee in the position of laying its "blessing" on the paper.

Meanwhile, the sub-committee staff announced that its public inquiry, approached as a "general survey" of the activities of the biggest six independent federal agencies would begin Jan. 27. Chairman James R. Durfee, of the Civil Aeronautics Board, will be the first witness.

Earlier Chairman John C. Doerfer of the FCC disputed the report that attacked his agency. He said it was "most inaccurate and misleading." The report, prepared by Dr. Bernard Schwartz, chief counsel of the subcommittee, was designed to lead off the public hearings with the FCC as the initial target.

It said the staff had evidence that members of the commission had been fully reimbursed by the industry for speaking trips, and had in addition received government expense allowances of $12 a day. It charged that members had received color television sets for their personal use. More important, it urged the sub-committee to explore deeply a "tendency" of the commission to favor big, established companies over beginners in licensing coveted television channels.

Chairman Doerfer's explanatory comment, which followed the leakage of the staff report (not finally made public) said, in part:

FOUR REA LOANS TOTAL $3,928,000

Four rural telephone loans totaling $3,928,000 were approved during the week of Jan. 13 by the Rural Electrification Administration. The loans will finance initial service for some 6,000 rural subscribers, automatic service for more than 4,000 existing subscribers, and other system improvements.

The borrowers are:

Grand Telephone Co., Jay, Okla.; $85,000; Jan. 17.

The borrower plans to extend service to 179 farm families not provided for in a prior loan. Toll service will be provided by the Southwestern Bell Telephone Co. from its Vinita exchange.

This loan and a previous REA loan, amounting to $255,000, will enable the borrower to provide new and improved service to 563 rural subscribers. The completed system will have automatic exchanges at Disney and Jay.

W. K. Aubrey is president and manager of the Grand Telephone Co.

•

Powell Telephone Co., Powell, Tenn.; $632,000; Jan. 17.

The borrower proposes to use the loan funds to furnish initial telephone service to 1,202 rural subscribers located in its Powell exchange area.

In order to provide this added service, the borrower plans to construct an automatic exchange at Claxton, within the present Powell exchange area. The borrower also intends to renovate the present Powell central office building in order to provide space for commercial office facilities.

The borrower's current and previous REA loans, totaling $1,725,000, will make possible new and improved service to 4,003 rural subscribers. The completed system will consist of exchanges at Claxton, Powell and Ruthledge. Presently the borrower is providing automatic service to approximately 1,900 subscribers.

C. N. Scarbro Sr. is president and manager of the Powell Telephone Co.

•

Consolidated Telephone Co., Florence, Ky.; $2,161,000; Jan. 17.

This loan will enable the new borrower to furnish initial service for 3,461 rural subscribers, and to improve service for its 3,013 existing subscribers.

The Consolidated company operates automatic exchanges at Florence, Hebron and Union, and magneto exchanges at Burlington and Walton.

Facilities of the three existing automatic offices will be modified and expanded. New automatic equipment will be installed in the Burlington and Walton buildings.

A portion of this loan will refinance the borrower's existing indebtedness.

G. B. Foscue Sr. is president of Consolidated Telephone Co. and G. B. Foscue Jr. is manager.

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Hillsborough & Montgomery Telephone Co., Belle Mead, N. J.; $1,050,000; Jan. 17.

The new borrower plans to use these loan funds to improve service for its 1,247 existing subscribers and to furnish initial service for 1,217 rural families. The company now furnishes automatic service through its Belle Mead exchange.

New construction scheduled includes new commercial office, garage and warehouse facilities at Belle Mead. The present automatic exchange will be expanded to accommodate the new subscribers.

A portion of this loan will refinance indebtedness incurred by the borrower in modernizing the present system.

John E. Dixon is president of the Hillsborough & Montgomery Telephone Co. John W. Orr is manager.

"A commissioner, when his expenses exceed the $9 or $12 per diem (government expense) allowance, may validly and with perfect propriety accept the excess.

"Some commissioners have color television sets on loan from manufacturers. To us, it's no luxury. It's part of our job to see how it works. We look at TV shows not for fun, but to learn what's going on.'

Comptroller General Joseph Campbell, whose job is that of a watchdog employed by Congress, wrote the House sub-committee that federal law prohibits an official from receiving per diem travel expenses from the government and in addition having part of his expenses paid by private sources. In this connection, Chairman Doerfer cited sections of law which said FCC members could not engage in any business or employment while holding office and said there was this additional proviso: "But this shall not apply to the presentation or delivery of publications or papers for which a reasonable honorarium or compensation may be accepted."

Chairman Doerfer has been with the FCC since the first year of the Eisenhower administration in 1953. He has the background of a Wisconsin lawyer and public service commissioner.

Other allegations in Schwartz's memo to the sub-committee were: That FCC members have been in constant fraternization with persons and corporations in litigation before the commission; that the FCC has shown a tendency to favor large established companies with extensive broadcast interests over the "small newcomer without established broadcasting interests."

Representative Harris (D., Ark.), chairman of the full House Interstate and Commerce Committee, was asked if the sub-committee would investigate the accusations in the Schwartz memo. He replied that "of course, the committee is going into all phases" of the report. He said there was no basis for any charge of "whitewashing."

The implication of a possible "whitewash" had been denied earlier by Representative Flynt (D., Ga.) of the sub-committee. Flynt said the subcommittee had no intention of covering up when it voted to lay aside the Schwartz FCC memo in favor of a general survey of other regulatory agencies as well as the FCC. He said the desire was to make sure things proceeded under rules of "evidence and fair play."

1958 Convention Calendar

Association	*Date*	*City*	*Hotel*
Louisiana	Feb. 12 and 13	New Orleans	Jung
Minnesota	Feb. 17, 18 and 19	St. Paul	St. Paul
Texas	March 3 and 4	Dallas	Baker
Kentucky	March 4	Lexington	Phoenix
Iowa	April 8 and 9	Des Moines	Fort Des Moines
Ohio	April 14, 15 and 16	Columbus	Deshler-Hilton
North Dakota	April 14 and 15	Fargo	Gardner
Nebraska	April 22 and 23	Omaha	Paxton
Indiana	May 7 and 8	Indianapolis	Claypool
American Railroads (Communications Section)	May 13, 14 and 15	Kansas City, Mo.	Muehlebach
Wisconsin	May 14 and 15	Milwaukee	Plankinton House
Illinois	May 21 and 22	Peoria	Pere Marquette
Kansas-Missouri*	May 26 and 27	Kansas City	Town House
Pennsylvania	May 26, 27 and 28	Bedford	Bedford Springs
Maine-New Hampshire-Vermont*	June 3, 4 and 5	Rockland, Maine	Samoset
California	June 4, 5 and 6	San Francisco	Sheraton-Palace
New York	June 16, 17 and 18	Schroon Lake	Scaroon Manor
Oregon-Washington*	June 19, 20 and 21	Portland, Ore.	Multnomah
Alaska	Aug. 11, 12, 13	Juneau	Baranof
Michigan	Sept. 9, 10 and 11	Grand Rapids	Pantlind
Arkansas	Sept. 15 and 16	Hot Springs	(Unannounced)
Rocky Mountain	Sept. 17, 18 and 19	Salt Lake City	Utah
USITA Annual convention	Oct. 13, 14 and 15	Chicago	Conrad Hilton
Virginia	Oct. 30 and 31	Roanoke	Roanoke
Oklahoma	Nov. 5 and 6	Oklahoma City	Huckins

*Joint Convention

Unions in Rate Cases

It is much too early to judge the latest ideas which the Communications Workers of America (CWA) seem to be entertaining about their future role, if any, in rate regulation. Early pronouncements from the CWA's recent 57-member policy committee, meeting in New York, were certainly provocative.

Full details were due to be made available to the press at a conference subsequent to this writing. But, enough was known in advance to indicate that CWA will ask for a part in telephone rate regulation, an area in which unions have had little part in the past, although there has been a good deal of talking about it. Just how kindly the regulatory commissions will take to such proposals remains to be seen. After all, the commissions are the sole judges of their own procedure unless there is some positive statutory direction telling them what to do.

Anyway, the advance dope indicated that CWA might interest itself in two ways in future telephone rate cases involving companies with employes organized by CWA: (1) CWA would undertake to furnish regulatory commissions with labor union statistics and data covering telephone company labor costs and estimates about labor-company contracts; (2) CWA might swing its "political action" activities into the area of influencing the appointments or elections (where the commissioners are elected) to state and federal regulatory commissions.

One union spokesman was quoted as saying, "We've always said the company is entitled to a fair return and never gone beyond that." That is not exactly the way this writer heard of such activity. In the past it seemed that on various occasions, when telephone companies sought rate relief or procedural relief to improve their earnings position, the CWA more often turned up on the other side of the arguments.

Maybe the policy committee meetings indicate a reversal of any former vindictive attitude of "tripping the boss" on anything management wanted to accomplish. Certainly it would make a lot more sense, from a union's standpoint, to see that telephone companies are in a better earnings position to meet union demands. The published comment attributed to CWA President Joseph A. Beirne about the danger of "killing the goose that laid the golden egg" has a constructive sound.

Mr. Beirne was quoted as saying, "We believe that this policy committee,

(Please turn to page 53)

New Developments in Independent Telephony

By RAY BLAIN

THE GROWTH of Independent telephony, as we all know, in the United States has been phenomenal. Its growth at the present time is more rapid than at any time in its history. Many new equipments, materials and tools have first proved their worth and application in the Independent field and later been adopted by the entire industry. The most logical explanation of this rapid growth is perhaps that the Independents are ever alert and willing to try new ideas and materials that might make it possible for them to furnish better service at a lower cost.

Independent manufacturers are also always willing to develop and fabricate new products which, in their opinion, will serve a useful purpose in the industry. With such a spirit of cooperation there is little doubt that the Independent telephone industry will continue to grow and prosper for many years into the future.

The following new devices, now available, are described for the consideration of Independent operating telephone companies everywhere.

School by Telephone (Fig. 1). For the past several years, a number of children have been going to school by telephone. These youngsters are confined to their homes by doctor's orders, but are well enough to carry on a fairly full schedule of studies. Ordinarily, only those who need home instruction for at least a semester are selected. Both elementary and high school pupils have received this service. It has been found, however, that in order to profit from this type of instruction, youngsters must be above the fourth grade, be of at least average intelligence, and most importantly, have a real determination to learn.

The school-to-home telephone system, now available, brings the school to the shut-in child. A direct telephone line makes two-way communication possible between the home or hospital and the regular classroom. With his home station, the shut-in child hears every word spoken in the classroom and recites in turn. The portable classroom station brings his voice clearly and distinctly to the teacher and to every member of the class. The shut-in can also participate in small group discussions. The volume can be controlled at both stations.

Fig. 1. School-by-telephone units are installed in the home of the confined student and in his classroom. Connected by telephone circuits, they provide two-way communication.

Equipment required to provide this home-to-school service is now available for sale to operating companies. The monthly rental charge for this service averages between $15 and $25, depending upon the distance and the number of departmentalized classroom outlets required.

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Five-Hole Reader-Computer (Fig. 2). This new reader-computer is available for use with automatic toll ticketing equipment. The system involves two units functionally: (1) Reader, and (2) computer. The reader is divided into two units physically: (1) Scanner-printer, and (2) reader relay unit.

The reader scans the tape and prints the information found thereon. Then the reader picks up the computer which computes and prints the charge. One computer can serve several readers because of its higher speed of operation. Moreover, the computer can be omitted, if desired, in which case the charge does not appear on the printed ticket.

The five-hole reader consists of (1) a scanner-printer unit which contains all operating controls and is small enough to move around easily, and (2) a reader relay unit which is connected to the scanner-printer by a flexible

Fig. 2. Five hole reader-computer.

cable and is about the size of a standard 18-inch switchboard cabinet.

The scanner-printer unit can be equipped with one or two printers, depending on the volume of tickets to be handled, or the printers are omitted and a separate card punch supplied, if punched cards are desired. It is also possible to furnish two printers and a card punch with switchover.

The tape scanner is a modified Teletype XD transmitter-distributor, and the ticket printer is a modified Teletype JP-2 message ticketer. Both of these equipments are simple and reliable and easy to maintain.

When a card punch is to be used, it may be leased or purchased from the desired business machine company. Existing reader circuits are designed for the IBM 024 punch, but other types or makes of punches could be used by providing suitable read-out circuits.

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Automatic Loudspeaking Telephone (Fig. 3). This automatic loudspeaking telephone is completely automatic on incoming calls when the left-hand front-mounted switch is in "auto" position. No physical contact needs to be made with the instrument. The ringing voltage will close a contact on an incoming call. An adjustment screw located in the base of the instrument may be set for the number of rings required to make contact, ranging from one-half ring to seven rings. Upon completion of a call, the calling party will automatically disconnect this telephone when he hangs up his receiver. The telephone is now ready for another incoming call. Disconnect time ranges from immediate to 40 seconds, depending upon the system on which this special telephone is used.

Fig. 3. Automatic loudspeaking telephone.

Outgoing calls are made by turning the right-hand switch to "Dial." When the dial tone is heard, start dialing and, upon contacting your party, return the "Dial" switch to the center position. Generally—but not always—again depending on the system, the telephone will disconnect automatically.

If the user wishes to terminate the call, he may do so by turning the right-hand switch counter-clockwise to "disconnect." The switch will return to the central position automatically.

To converse privately, the user need only lift the handset. To return to loudspeaking, turn the right-hand switch clockwise, replace the handset in its cradle and "centralize" the right-hand switch.

The case of this telephone is made of Butyrate and is available in five colors: Black, Gray, Green, Brown and Beige.

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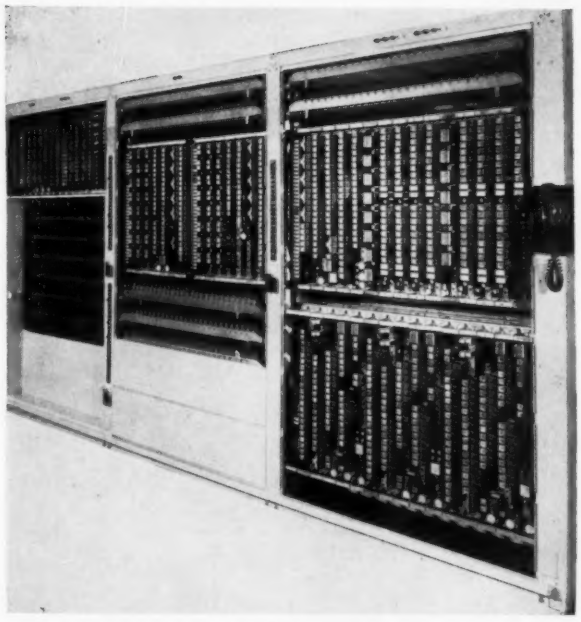
Crossbar Switching System (Fig. 4). This new crossbar telephone switching system is said to incorporate in one system all known requirements of central office switching systems in Independent telephony. It can be engineered for any requirement from those of the small community dial office to the large metropolitan exchange.

It is claimed that this system is one in which full-terminal-per-station efficiency is available with the same amount of equipment required in older techniques of terminal-per-line operation. To accomplish this, registers and full-station translator bays are used. The registers are arranged to accept 14 digits and completely control selections through the equipment on a stage-by-stage basis. Number assignments are accomplished in the translator by inserting rectifiers in a matrix associated with each telephone number. Stage-by-stage switching beyond the register is on a logical sequence basis and calls can be easily traced. Incorporated within the system is the facility to detect fault conditions and the "intelligence" to lock the trouble paths in the condition in which they were found. This permits every call switched through the equipment to be a routining call.

Fig. 4. Crossbar switching system.



Other features listed include: Each selector stage is arranged for 15 levels; PBX groups can be spread over the entire office, eliminating the need for high-traffic connector groups; and telephones can be arranged for joint-party release, thus permitting the tracing of malicious calls; full intercept facilities —both local and toll; both originating and terminating classes of service; through the use of the number group translators, the distributing frame is reduced to one two-conductor jumper per line.

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Rural Type Carrier System (Fig. 5). The first four channels of this new transistorized rural subscriber's carrier system were recently introduced. This system is similar to the type "P" carrier of the Bell System. It is designed as a stackable system with arrangements provided for dropping one or more channels, as required. Within a short time an additional four channels will be available which will increase the system capacity to eight channels. Cable repeaters, also under development, will extend the nominal 30 db loop gain of the system to 65 or 70 db.

Low cost operating and maintenance advantages result from transistors, printed circuit techniques and mechanical features. Simplicity of maintenance and ease of service are made possible by maintaining identical wiring cards interchangeable in any channel location in the system.

Signaling options are available to permit operating with either frequency or biased ringer central office arrangement. The four-channel central office terminal requires 8¼ inches of 19 inches rack mounting space. The four-channel subscriber's terminal occupies 14 inches of rack space and may be either pole or office mounted.

The central office terminal operates from 48 volts dc with a nominal drain of 250 MA for the four channels. The subscriber's terminal is easily operated from 117 volts ac with a 22-volt battery providing approximately six hours standby in the event of commercial power failure.

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Key System (Fig. 6). This system has operating features and appearance similar to the Western Electric Type 1A1 system. It offers trunk answering, hold, and intercommunicating on four

Fig. 6. Key telephone system.

or six-button telephone sets. The maximum capacity of the six-button set is five central office lines with one hold button. If intercommunication is required, either manual or dial, the trunk group will be reduced by one. The telephone units are available in a full range of colors to harmonize with any office decorating scheme. This system is furnished with a group of subassemblies which permit the operating company to install the exact features and capacity desired by its subscribers.

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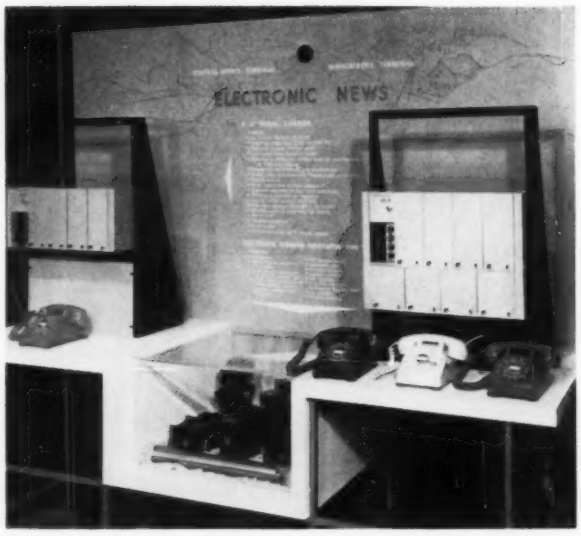
The Transistor Sub-Cycle (Fig. 7). The transistor Sub-cycle operates directly from the 50-volt exchange battery, for greater simplicity of installation and use. DC operation eliminates

Fig. 5. Rural type carrier system.



switching in the event of ac power failure and increases the flexibility of the installation because the stand-by unit is identical with the normal running unit. The current drain from the battery is about 0.6 ampere at no load, about 5 amperes with full load on all frequencies. A built-in battery filter insures that no noise from the Sub-cycle will reach the talking circuits.

Each output frequency of the transistor Sub-cycle is individually controlled, with a screwdriver-operated adjustment accessible through the front panel. Once the frequency is set, it is not subject to significant variation under any operating condition, including variable input voltage, variable temperature, duration of use, and load conditions. The components are of rugged conservative design, and not subject to deterioration with use.

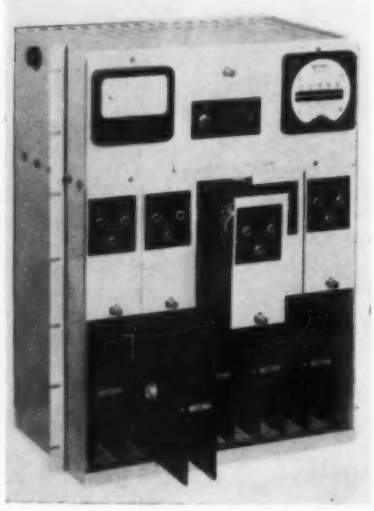


Fig. 7. Transistor Sub-cycle.

The same components are used for each frequency so that a ringing generator can be adjusted in the field, if necessary, to provide a different combination of frequencies than that originally suppled. All of the plug-in frequency generators are identical except for adjustable connections used in setting the frequency generators to the required output.

The rated ouput current is 0.20 amperes per frequency, and full load can be carried on all five frequencies simultaneously. When using commutated current distribution, this provides adequate capacity for 4,000 lines or more.

The transistor Sub-cycle has built-in voltage compensation and changes in battery voltage between 44 and 56 volts produce very little change in ringing voltage. The ringing voltage also remains very nearly constant at all times with changing load. An output voltage adjustment control is accessible on the front panel of each frequency generator. In addition, output taps provide a selection of ringing voltage range for each frequency.

Overloads or momentary short circuits on the output of the Sub-cycle are automatically absorbed without danger or damage to the components, and without the possibility of fuse operation.

Each frequency generator is equipped with a tone coil having taps for adjustment of the reverting tone level to suit local conditions.

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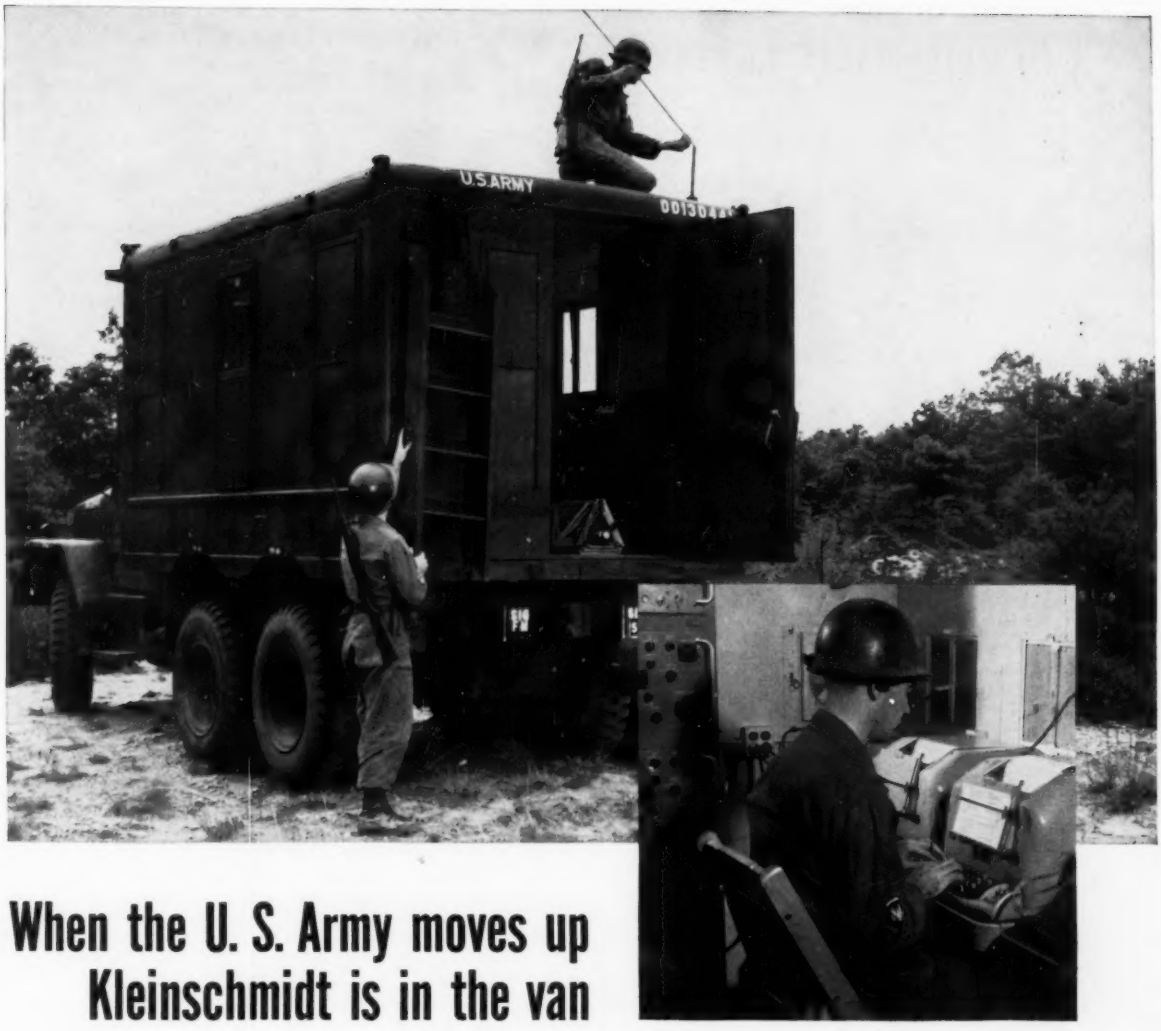
Auxiliary Battery Charger (Fig. 8). This auxiliary battery charger is a constant-current unit, designed to extend the load capacity of the standard 48-volt Recticharger. Operated in con-

(Please turn to page 38)



When the U. S. Army moves up Kleinschmidt is in the van

Kleinschmidt page printers and reperforator teletypewriters receive and transmit teleprinted communications wherever a truck can roll.

As division headquarters advances in the field, it is imperative that communications with outlying units be maintained without interruption. Kleinschmidt teletypewriters and related equipment, installed in a U. S. Army cargo truck and transmitting by radio, provide a message center that meets every demand of mobility and dependable two-way communications. These Kleinschmidt units, developed in cooperation with the U. S. Army Signal Corps, furnish sender and recipient with an identical teleprinted original, eliminating misinterpretation and speeding the required action.

Research and development of equipment for transmitting and receiving printed communications has been a continuing project at Kleinschmidt for almost 60 years. This unparalleled store of experience, now joined with that of Smith-Corona Inc, holds promise of immeasurable new advances in electronic communications.

KLEINSCHMIDT LABORATORIES, INC.

PIONEER IN TELEPRINTED COMMUNICATIONS EQUIPMENT

A SUBSIDIARY OF SMITH-CORONA INC • DEERFIELD, ILLINOIS

Telephone Growth Key To Expansion of Gulf and Florida Ports

By ALEXANDER I. WARRINGTON*

A NUMBER of studies, some of which have been published by TELEPHONY, has revealed a striking contemporaneous growth in various facets of the economy with the general expansion of both residential and business telephones. A sleepy economy has often become vibrant with life, almost instantaneously, as a result of improved telephone service or service where it did not previously exist. One example, which aroused considerable interest, after it was released in TELEPHONY, was the introduction of telephone communication to remote parts of the South American continent and the resultant upswing of 10 per cent in coastwise shipping.

These and other facets have indicated that an analysis of American ports in relation to telephone service in the hinterland of those ports would bring out some new concepts that should prove helpful in better understanding our tremendously complicated economic system.

Therefore without any further ado, this study begins with *Table 1*.

Boundaries of Hinterland

The states enumerated in *Table 1*, are in the so-called primary and secondary hinterland of the Gulf and Florida ports and do not include the states or parts of states in the tertiary hinterland shown on the map in *Fig. 1*.

If the Gulf of Mexico and Florida ports were the only ones serving the United States, there would be little difficulty in arriving at a generally acceptable area which could be called the hinterland. However, the United States is also served by Atlantic, Pacific and inland ports. Therefore, all of the United States is the hinterland of all of its ports, but certain regions of the United States tend to veer toward specific ports, and the net result is a degree of overlapping.

If a study were made, similar to this one, but of the Atlantic and/or Pacific

*Mr. Warrington, Industrial Economist of Baton Rouge, La., has written several articles for TELEPHONY depicting rapid telephone communications as "the circulatory system of the American economy," and the telephone industry as an "economic radar system."

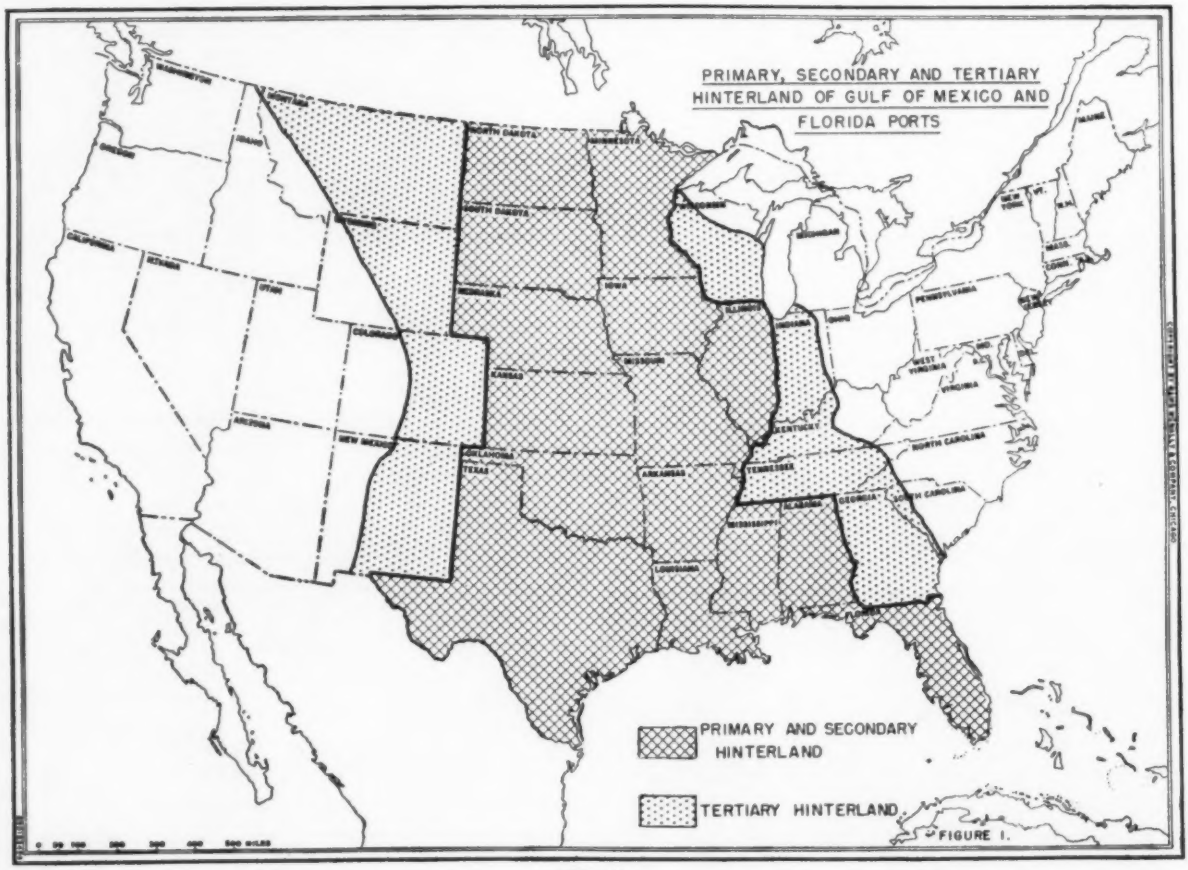


Fig. 1

ports, it would be found that some of the states shown in *Fig. 1* would again be shown for Pacific and Atlantic areas or hinterlands. This situation is not particularly difficult to comprehend when we stop a moment and reflect on the fact that economic boundaries are rarely very specific; and lines of demarcation are not "lines" at all but general locations where economic forces become stronger or weaker.

Analysis of Table 1

Telephone statistics as an economic indicator are restrained and, therefore, are more significant than most units of measurements. A sentence or two will clear up what is meant by this statement. A business can expand *up to a certain degree* without additional telephone service and there can be family expansion without additional telephone units. This provides an elasticity that cannot be found in such things as bank debits and any number of other items that serve as economic thermometers and barometers. Telephone statistics, then, are like the gauge that provides a few extra gallons of gas even when the tank registers "empty," which creates a margin of security or assurance.

It will be noted in *Table 1* that the states on the Gulf are Texas, Louisiana, Mississippi, Alabama and Florida. These states, it will be noted, show a much higher rate of increase in telephone service than the rest of the states on the map. This is a fact of the highest interest, particularly in the field of international economics, because proof now exists, and probably for the first time, that there is a correlation between a number of economic functions.

A port which has consistently handled a good deal of general cargo is the Port of New Orleans, and it will be discussed first since it will bring

TELEPHONE SERVICE IN THE PRIMARY AND SECONDARY HINTERLAND OF GULF AND FLORIDA PORTS, 1951-1956

State	Year	Telephones Business	Telephones Residence	Total	% Inc.
Ala.	1951	119,100	304,700	423,800	
	1952	130,500	334,800	465,300	9.7
	1953	137,900	352,900	490,800	5.4
	1954	145,600	376,300	521,900	6.3
	1955	151,300	395,100	546,400	4.6
	1956	158,600	424,800	583,400	6.7
Ark.	1951	80,300	172,900	253,200	
	1952	83,800	179,100	262,900	3.8
	1953	88,100	188,500	276,600	5.2
	1954	90,900	195,600	286,500	3.5
	1955	93,700	204,300	298,000	4.0
	1956	96,100	218,300	314,400	5.5
Fla.	1951	265,400	381,600	647,000	
	1952	305,000	447,000	752,000	16.2
	1953	335,100	495,400	830,500	10.4
	1954	361,600	548,300	909,900	9.5
	1955	377,200	625,500	1,002,700	10.1
	1956	410,200	721,200	1,131,400	12.8
Ill.	1951	972,200	2,067,400	3,039,600	
	1952	1,008,900	2,140,140	3,149,040	3.6
	1953	1,043,400	2,224,700	3,268,100	3.8
	1954	1,074,700	2,302,600	3,377,300	3.3
	1955	1,091,400	2,394,100	3,485,500	3.2
	1956	1,135,400	2,547,200	3,682,600	5.6
Iowa	1951	167,700	656,700	824,400	
	1952	172,400	671,100	843,500	2.3
	1953	178,700	688,700	867,400	2.8
	1954	184,100	705,500	889,600	2.5
	1955	189,300	728,200	917,500	3.1
	1956	203,400	757,200	960,600	4.6
Kan.	1951	135,200	459,000	594,200	
	1952	143,300	477,100	620,400	4.4
	1953	154,100	493,800	647,900	4.4
	1954	161,500	512,300	673,800	3.9
	1955	170,000	531,900	701,900	4.2
	1956	177,200	554,000	731,200	4.1
La.	1951	153,400	363,100	516,500	
	1952	163,200	393,100	556,300	7.7
	1953	175,400	417,800	593,200	6.6
	1954	185,100	450,900	636,000	7.2
	1955	193,000	489,900	682,900	7.3
	1956	206,700	537,700	744,400	9.0
Minn.	1951	222,000	681,800	903,800	
	1952	233,800	713,100	946,900	4.7
	1953	242,500	738,100	980,600	3.5
	1954	250,400	759,000	1,009,400	2.9
	1955	259,500	782,900	1,042,400	3.2
	1956	273,600	823,700	1,097,300	5.2
Miss.	1951	68,100	158,700	226,800	
	1952	71,600	170,400	242,000	6.7
	1953	75,100	179,600	254,700	5.2
	1954	79,100	189,400	268,500	5.4
	1955	83,500	204,400	287,900	7.2
	1956	88,300	219,800	308,100	7.0
Mo.	1951	331,100	817,500	1,148,600	
	1952	347,700	850,600	1,198,300	4.3
	1953	358,300	888,800	1,247,100	4.0
	1954	369,300	919,400	1,288,700	3.3
	1955	362,500	972,600	1,335,100	3.6
	1956	385,300	1,016,700	1,402,000	5.0
Neb.	1951	96,300	304,500	400,800	
	1952	100,900	317,100	418,000	4.2
	1953	104,600	327,600	432,200	3.3
	1954	107,800	334,600	442,400	2.3
	1955	108,600	342,300	450,900	1.9
	1956	117,900	359,400	477,300	5.8
N. D.	1951	31,400	94,400	125,800	
	1952	32,690	97,300	129,990	3.3
	1953	34,300	101,600	135,900	4.5
	1954	35,600	104,400	140,000	3.0
	1955	36,200	107,900	144,100	2.9
	1956	37,900	112,200	150,100	4.1
Okla.	1951	167,300	405,300	572,600	
	1952	174,400	422,300	596,700	4.2
	1953	184,500	443,600	628,100	5.2
	1954	191,100	453,700	644,800	2.6
	1955	200,800	471,800	672,600	4.3
	1956	209,800	496,100	705,900	4.9
S. D.	1951	35,800	118,400	154,200	
	1952	37,500	122,200	159,700	3.5
	1953	38,800	124,200	163,000	2.0
	1954	40,000	126,000	166,000	1.8
	1955	40,900	129,600	170,500	2.7
	1956	44,200	135,600	179,800	5.4
Tex.	1951	603,800	1,275,800	1,879,600	
	1952	650,500	1,395,000	2,045,500	8.8
	1953	700,000	1,500,800	2,200,800	7.5
	1954	733,800	1,565,600	2,299,400	4.4
	1955	766,500	1,647,200	2,413,700	4.9
	1956	810,800	1,767,200	2,578,000	6.8
Primary and Secondary Hinterland, Total	1951	3,449,100	8,261,800	11,710,900	
	1952	3,656,190	8,730,340	12,386,530	5.7
	1953	3,850,800	9,166,100	13,016,900	5.0
	1954	4,010,600	9,543,600	13,554,200	4.1
	1955	4,124,400	10,027,700	14,152,100	4.4
	1956	4,355,400	10,691,100	15,046,500	6.3
U.S.A.	1951	12,936,800	30,067,000	43,003,800	
	1952	13,725,400	31,911,000	45,636,400	6.1
	1953	14,437,400	33,618,900	48,056,300	5.3
	1954	15,030,700	35,342,300	50,373,000	4.8
	1955	15,511,200	37,302,600	52,813,800	4.8
	1956	16,388,700	39,854,500	56,243,200	6.4

Table 1

out a number of typical situations (See *Table 2*).

Port of New Orleans

Instead of going into a detailed and lengthy discussion on the relationship of *Table 2* with the ones already shown, it is believed that the reader will find it more interesting to make his own reviews and come to his own conclusions.

The Port of New Orleans as a world port goes back to 1718, the date the city was founded. Currently, the largest expansion program in the port's history is in progress at a cost that will probably exceed 72 million dollars.

Of the many reasons that could be given for the great success of this world renowned port, constant research of every conceivable type is probably at the tip of the list. Communication and transportation industries, power and light companies, and many other industries and institutions, are perpetually encouraging research. The brochures, pamphlets and books that are being constantly released stand out as products of the highest excellence and reflect skills and comprehensions that are a great credit to both the sponsors and researchers.

Port of Houston

The amount of cargo handled at Houston since 1951 is a record breaker and far surpasses tonnage handled in previous years. The port is entirely man-made and began its existence in 1915 (See *Table 3*).

While the "theme of correlation" continues in *Table 3*, this table, if compared with *Table 2*, should take into account that, while the Port of New Orleans handles a tremendous amount of general cargo, the Port of Houston leans very strongly toward specialized cargoes—petroleum and related.

It is believed that enough statistics have been published to show the general trend and associations, and for the remainder of the article the findings will be generalized.

Port of Galveston

In February 1957, Galveston celebrated its 103rd birthday as a city and port. Today, it is one of the leading dry cargo ports and, as a result of improved communications, it is quickly becoming a center for the handling of livestock.

Florida Ports

The state of Florida has prepared detailed brochures on the following ports: Port of Tampa, Port of Pensacola, Port of Miami, Port Everglades, Port of Jacksonville, Port of Palm Beach, Port of Panama City and a number of minor ports. The pattern of these ports in the composite is similar to those already indicated for New Orleans and Houston.

A. I. WARRINGTON

Port Lake Charles

The activities of this port reflect, more or less, the activities of Gulf inland ports of which there are many and more to come through positive planning.

Although tonnage handled in 1955 was in excess of 15 million, the general cargo figures are more indicative of what is going on in Gulf inland ports and also on the very important Intracoastal Canal (See *Table 4*).

Conclusions

The best assurance that can be found that the economy is sound and will continue to operate for the best interests of all is generally increasing telephone service, both residential and business. Communication, particularly rapid communication, is the circulatory system of our economic organism. Telephone statistics are so very significant because they do more than reflect; they actually forecast, and properly used, the telephone industry, as a whole, will more and more serve as an economic radar system.

PORT OF NEW ORLEANS, LA. — FOREIGN TRADE
Compiled by Statistical & Research Division, Commerce Department, Board of Commissioners of the Port of New Orleans, Sept. 10, 1956

	MILLIONS OF DOLLARS			SHORT TONS		
Year	Imports	Exports	Total	Imports	Exports	Total
1949	424.1	801.9	1,226.0	3,164,743	5,244,617	8,409,360
1950	507.8	748.6	1,256.4	3,619,007	4,620,237	8,239,244
1951	649.4	1,050.2	1,699.6	4,239,151	6,007,351	10,246,351
1952	627.6	883.2	1,510.8	4,240,325	6,416,934	10,657,259
1953	629.1	776.2	1,405.3	4,467,317	6,025,374	10,492,691
1954	590.6	877.9	1,468.5	3,774,377	6,331,664	10,106,041
1955	589.7	838.4	1,428.1	4,022,510	7,194,040	11,216,550

Table 2

COMPARATIVE STATEMENT SHOWING TONNAGE AND VALUE OF TRAFFIC MOVING OVER THE HOUSTON SHIP CHANNEL

Year	Import Tonnage	Export Tonnage	All Other Tonnage	Total Tonnage	Total Value
1950	2,285,998	4,549,193	35,159,952	41,995,143	1,164,256,000
1951	1,760,295	6,109,638	37,181,815	45,051,748	1,639,110,400
1952	1,925,107	6,913,172	36,659,652	45,497,931	2,103,918,793
1953	1,676,965	6,103,107	36,364,233	44,144,305	1,983,650,445
1954	2,078,550	4,515,497	34,053,112	40,647,159	1,882,359,629
1955	2,500,812	4,655,312	36,602,463	43,758,587	2,325,191,925

Table 3

GENERAL CARGO* HANDLED AT PORT LAKE CHARLES

Year 1950	319,533 tons
Year 1951	351,935 tons
Year 1952	483,484 tons
Year 1953	431,940 tons
Year 1954	386,853 tons
Year 1955	472,918 tons
Year 1956	731,000 tons

*Total tonnage grew from about 13 million in 1950 to more than 15 million in 1955.

Table 4

USITA Issues Statement On Federal Excise Taxes

THE UNITED STATES Independent Telephone Association, through its tax committee, has issued a statement setting forth the association's position in regard to federal excise taxes on telephone service.

The statement entitled "The Case For Repeal Of Telephone Excise Taxes" was signed by members of the USITA's tax committee—R. A. Lumpkin of Mattoon, Ill., chairman; Hugh A. Barnhart of Rochester, Ind., Thomas A. Boyd of New York City, Judson Large of Chicago, Samuel F. Nixon of Westfield, N. Y., and Harlan W. Holmwood of Santa Monica, Cal.

At the same time the USITA released to secretaries of state telephone associations copies of a "Tax Manual" containing information concerning the telephone excise taxes and supporting the Independent industry's position calling for early repeal of these taxes.

The data in the manual are designed for the use of state association secretaries in encouraging Independent telephone companies to explain to heavy users of long distance service, newspaper editors, civic and business groups, the unfairness of these taxes and the burden they place on telephone subscribers.

The full text of the USITA statement follows:

"The United States Independent Telephone Association and its member companies urge the early repeal of federal excise taxes on communication services. Their position is summed up as follows:

"(1) The federal excise tax on communication services was conceived as an emergency measure and should not be continued longer lest it may come to be regarded as a permanent part of the tax structure.

"(2) The tax is unfair because it discriminates against users of telephone service. Regarded by most people as a daily necessity, telephone service is treated as a luxury for tax purposes and subjected to rates approaching those imposed on club dues, cabaret bills, liquor, and tobacco. It is the only household utility service so taxed.

"(3) The necessity of maintaining federal tax revenues at the current high level should not preclude the elimination of the unfair and discriminatory excise tax on communication services. The nature of this tax demands its early repeal.

"(4) Without questioning the Joint Federal-State Action Committee's suggestions for the transfer of certain functions to the states, the proposal that any portion of the federal excise tax on communication services be credited to the states in order to meet the cost of these functions is basically unsound. State responsibility would rest insecurely if supported by a temporary tax and the excise tax on communication services should not be permitted to become permanent.

"We suggest that selected individuals such as heavy long distance users, editorial writers, etc., members of voter organizations such as League for Women Voters, and business organizations such as local chambers of commerce, be contacted and all of the points outlined above be discussed with them.

"The full story is too complex to cover in mass media. However, bill inserts, posters, and other materials for general distribution should cover the first two points."

The subject of telephone excise taxes was also discussed in the "January Share Owners' Quarterly Report" of the American Telephone & Telegraph Co. The statement called for the end of the excise tax on local telephone service "as soon as circumstances will permit." The full AT&T statement on the excise tax follows:

"The facts above indicate that the telephone is carrying its share of the country's tax load. It is pulling its weight in the boat. Its full weight, you may feel.

"Today however telephone service also carries an extra tax burden or "supercharge" which is laid on top of all the others.

"This is the federal excise tax of 10 per cent already mentioned. In 1957 this increased the total tax on Bell System service by an *additional* 515 million dollars.

"We strongly believe this tax is discriminatory. We have so said in the past to the taxing authorities in Washington, and will again whenever suitable opportunities arise.

"Telephone service is an essential. Jobs depend on it. Lives depend on it. Trade and commerce depend on it.

"But it is subject to excise tax at the same rate as furs, perfume, and jewelry. In fact, only a very few things, such as liquor, tobacco, club dues and cabarets, are taxed at a higher rate.

"Telephones, electricity and gas are all regarded as household necessities. There is no federal tax on electricity or gas. Nor is there any on local transportation. But use of the telephone is taxed 10 per cent. One necessity carries a load that the others do not.

"At the very least, and in particular, we think the excise tax on local phone service should be ended as soon as circumstances will permit. This began in 1941 as an emergency measure. To regard it as proper for the long run seems to us unthinkable.

"We fully recognize the great problems involved in obtaining enough tax revenue to meet all the country's needs. But there is always the need, also—and lawmakers are always trying—to be as fair as possible in spreading the burden. We urge, therefore, that in doing whatever is necessary to solve immediate problems, they will also consider how to avoid perpetuating a high rate excise tax on essential service. For even without this, telephone users are paying a pretty big share of the nation's tax bill."

In line with its position urging the repeal of the discriminatory telephone excise taxes, which has been stated editorially, TELEPHONY urges every telephone company to make special effort to acquaint their subscribers with the unfairness of these taxes and solicit their support for the repeal of the taxes.

Puts Alarms in Outdoor Paystations to Foil Vandals

Pacific Telephone & Telegraph Co. recently announced that it had installed alarm systems in outdoor telephone booths near San Francisco, Cal., because of a recent rash of vandalism.

Since Nov. 1, the company reported, hoodlums have smashed 66 pay telephone instruments in outlying areas of San Francisco and San Mateo Counties. Some of the paystations contained as much as $100 in change, which was stolen.

Prior to installing the alarm systems, the company estimated the total cash loss at $7,119 and the damage to telephones and telephone booths at about $22,000.

Western Electric Co. Offers Its Engineers Graduate Study

More than 2,000 engineers per year will take courses at Western Electric Co.'s new graduate schools, opened recently in Chicago, New York City and Winston-Salem, N. C.

University professors and Western Electric engineers will present employes with the newest findings in engineering, physics, chemistry and mathematics.

Timothy E. Shea, Western Electric Co. vice president, said that the company believes it is part of the responsibility of industry to close the gap between scientific knowledge and engineering knowledge and practice.

Classes will be divided into those newly employed by the company, employes with a year and a half of experience and experienced engineers.

THE Operator's Corner

By MAYME WORKMAN — TRAFFIC EDITOR

HOW WOULD you feel if you helped to save a human life? Very happy, I'm sure. Two operators in the Whittier (Cal.) exchange of the General Telephone Co. of California, Ruth Collett and Beverly Panghorn had such an experience not too long ago. It began when Mrs. Frank L. White, a real-estate broker, left her office in Downey at 7:30 p.m. Mrs. White hadn't realized it was so late. She went to the parking lot to pick up her car, and as she switched on the ignition and headed the car out of the lot, she realized she was hungry and she began to think about dinner.

Her husband had telephoned earlier that this was his lodge night, and that he would be leaving directly from his own real-estate office in Whittier to attend a dinner meeting. She decided she was too tired to prepare dinner, so she stopped at a delicatessen to select something for sandwiches.

Pickles and relish—some of that potato salad would be nice—and rye bread. What kind of meat? She picked up a package of boiled ham. That should be good—a nice ham sandwich.

A few minutes later, Mrs. White was sitting down to the kitchen table and her picnic supper. She bit into the sandwich she had made and placed it on her plate. Somehow it tasted strange. She looked at the ham—smelled it. It smelled all right. Her imagination, she supposed—or perhaps she was just tired. She resumed eating.

When her sandwich was about half consumed, she got up and walked over to the stove to pour a cup of coffee. As she started back to the table a sudden, sharp pain hit her—then nausea, cramps, dizziness—all happening at once.

She stumbled over to the table to put down the cup and saucer—and heard them crash to the floor. Her vision was playing tricks on her—things were becoming blurred—she looked up and saw the wavering hands on the wall clock at 8 p.m. gradually fade and become dimmer. And then nausea, violent and unceasing.

The blackness was closing in on her again. She felt dizziness, and then oblivion, as she sank into darkness. She fainted.

Slowly she regained consciousness and tried to get up, but she couldn't seem to stand very straight. What could this be? She was violently ill, half blind, her coordination going. Then she knew. Somewhere she had read about it—what was the word? Botulism was the medical term, but it meant food poisoning. It could often be fatal in advanced or extreme cases. The ham! She was frightened. She had to get help—her doctor—the telephone.

She felt and groped her way into the bedroom and picked up the receiver.

"—and I said I didn't see why she had to always open with a club bid. She has no imagination, that Harriett, she—"

"Please!" Mrs. White cut in on the party line. "Please! I'm sick—I must use the telephone to call my doctor—I'm sick—"

"Yeah, honey, I know. I'm sick, too. Now Ruth, as I was saying before this character interrupted us—."

Mrs. White hung up. She was getting dizzy. She tried to get out of doors. Partial paralysis of the throat was setting in. She was alone and she was going to die if she didn't reach the telephone. She pulled on the telephone cord, it fell, and finally her hands found the receiver. She heard the dial tone. The line was clear. She felt until her finger found the "0" on the dial. From now on her fate was in someone else's hands.

It was 9:15 p.m. as operators Ruth Collett and Beverly Panghorn resumed their positions at the Whittier switchboard after taking their evening coffee break together. A light flashed on Ruth's board, and she plugged in her cord. She heard mumbled, garbled sounds, not distinguishable, but they communicated one word to her alert mind; distress.

"Bev," she turned to her co-worker, "monitor this call for me. Someone's in trouble."

The two girls listened, and finally heard one word from Mrs. White: "poison."

The operators went to work immediately.

They asked for her name and address and distinguished enough to look it up. After much effort, they obtained the name of Mrs. White's doctor.

While one operator worked, the other kept talking to Mrs. White to keep up her spirits. The operator contacted a neighbor and when they arrived at Mrs. White's home, a squad car from the sheriff's office was parked by the curb.

Then Dr. Spier arrived. After a minute the operators heard Dr. Spier saying, "She's going to be all right; I can hear her heart beat now. It's faint, but it's beating. She'll be OK."

Some minutes later, Ruth and Beverly heard one final voice on the line:

"This is Mr. White. We're taking my wife to the hospital, and the doctor assures me she'll recover. Thank you for all you've done. Goodbye." The receiver clicked.

Mrs. Frank L. White today is well and happily is recovered from the harrowing experience described in the foregoing story which appeared in the "California General News."

Mrs. White has this to say: "I always thought of the telephone as a mechanical instrument—never as being human. I know now that back of every corporation or business is the humanity of its employes. Through their intelligence and efficiency, the two young women who talked to and encouraged me, and sent help when it was desperately needed, have, in my opinion and that of my physician, greatly helped to save my life. More than ever I

(Please turn to page 48)

USITA Committees For 1957-58

THE UNITED STATES Independent Telephone Association has announced the membership of its committees which will carry on the activities of the association for the coming year. Following is a list of the various committees and sub-committees, with the names of the members of each group:

EXECUTIVE

Clive W. Huss, Big Timber, Mont., *Chairman*
Frank S. Barnes, Rock Hill, S. C.
Carl D. Brorein, Tampa, Fla.
Ray Dalton, Everett, Wash.
L. D. Densmore, Lincoln, Neb.
R. J. Fegan, Junction City, Kan.
W. C. Henry, Bellevue, O.
F. G. LaPrade, Martinsville, Va.
Donald C. Power, New York, N. Y.
Andrew J. Sordoni, Wilkes-Barre, Pa.
Robert C. Tait, Rochester, N. Y.

ACCOUNTING

I. J. Devoe, Lincoln, Neb., *Chairman*
W. A. Brown, Tampa, Fla.
Robert D. Buzzard, Erie, Pa.
W. F. Corman, Atmore, Ala.
William H. Todd, Bellevue, O.
Keith Vine, Monrovia, Cal.
O. M. Westrup, Mattoon, Ill.

ADVERTISING

C. C. Pearce, Riceville, Ia., *Chairman*
Peter M. Ferguson, Jr., Mankato, Minn.
Paul H. Kaufman, Bellevue, O.
Richard Post, Brownwood, Tex.
R. C. Reno, Chicago, Ill.

COMMERCIAL

Kenneth L. Lawson, Lincoln, Neb., *Chairman*
Carl D. Brorein, Jr., Tampa, Fla.
F. Mark Clark, Rochester, N. Y.
LaMar S. Stoops, Nappanee, Ind.
E. H. Utzman, Brownwood, Tex.

EMPLOYMENT RELATIONS

Clyde McFarlin, Montezuma, Ia., *Chairman*
Carl D. Brorein, Tampa, Fla.
L. D. Densmore, Lincoln, Neb.
S. A. Lane, Russellville, Ark.
Ralph F. Lucier, Warsaw, Ind.
M. K. Taylor, New York, N. Y.

ENGINEERING

Paul Henson, Lincoln, Neb., *Chairman*
R. J. Loveland, San Francisco, Cal.
W. T. Pitbladdo, Rochester, N. Y.
F. D. Reese, New York, N. Y.
A. A. Wilson, Mattoon, Ill.

Sub-committee on Radio and Carrier

M. L. Donaldson, Tampa, Fla., *Director*
B. L. Arnold, San Carlos, Cal.
R. H. Herrick, Lorain, O.

Sub-committee on Direct Distance Dialing (DDD)

L. L. Ruggles, Chicago, Ill., *Director*
Harry Barrows, Monrovia, Cal.
C. M. Davis, Santa Monica, Cal.
M. L. Donaldson, Tampa, Fla.
H. J. Kleinhammer, Bristol, Tenn.

Sub-committee on Engineering Education

Paul Henson, Lincoln, Neb., *Director*
R. L. Loveland, San Francisco, Cal.
F. E. Norris, New York, N. Y.

Sub-committee on Transmission and Protection

F. S. Barnes, Jr., Rock Hill, S. C., *Director*
P. K. Fugate, Springfield, Ill.
R. E. Lawrence, Tarboro, N. C.
M. S. Royalty, San Carlos, Cal.

Sub-committee on New Techniques and Devices

Ray Blain, Washington, D. C., *Director*
Gordon Orelli, New York, N. Y.
George Shoemaker, Norwich, N. Y.

HIGHWAY RELOCATION COSTS

Hugh A. Barnhart, Rochester, Ind., *Chairman*
H. H. Butler, Dallas, Pa.
Harry J. Huether, Jr., Lexington, Ky.
Clyde McFarlin, Montezuma, Ia.
Kelley McNish, Bristol, Tenn.

LIAISON WITH PRIVATE COMMUNICATION SYSTEMS

Kenneth L. Lawson, Lincoln, Neb., *Chairman*
D. E. Lamaster, New York, N. Y.
P. A. Nenzel, San Francisco, Cal.
W. G. Winters, Houston, Tex.

MEMBERSHIP

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Foster B. McHenry, Jefferson City, Mo.
Robert C. Tait, Rochester, N. Y.

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L. D. Densmore, Lincoln, Neb.
L. W. Hill, Tarboro, N. C.
George P. Norton, New York, N. Y.
C. C. Pearce, Riceville, Ia.
Robert C. Tait, Rochester, N. Y.

Technical Advisors

R. C. Reno, Chicago, Ill.
Ray W. Smith, Chicago, Ill.

NATIONAL DEFENSE

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Hugh A. Barnhart, Rochester, Ind.
Carl D. Brorein, Tampa, Fla.
W. C. Henry, Bellevue, O.
L. W. Hill, Tarboro, N. C.
R. A. Lumpkin, Mattoon, Ill.

PLANT

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Clayton E. Howden, Rochester, N. Y.
Frank S. Barnes, Jr., Rock Hill, S. C.
George B. Quatman, Lima, O.

Sub-committee on Outside Plant

P. M. Ferguson, Jr., Mankato, Minn., *Director*
E. L. Barnes, Rock Hill, S. C.
L. Gray Beck, Everett, Wash.
Paul Bransby, Columbia, Pa.
Roger L. Lyons, Ft. Wayne, Ind.

Sub-committee on Inside Plant

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W. J. Holladay, Fayette, Ala.
E. L. Langley, San Angelo, Tex.
Martin W. Wandrey, La Crosse, Wis.

Sub-committee on Safety

C. J. Lohman, Springfield, Ill., *Director*
M. S. Bodine, Jefferson City, Mo.
Cliff Lewis, Lima, O.
John G. Reynolds, Chicago, Ill.

PROBLEMS OF SMALL COMPANIES

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C. C. Pearce, Riceville, Ia.
R. J. Schafer, Pinconning, Mich.
H. M. Stewart, Cornelia, Ga.
Willard Wade, Bishop, Cal.
(NOTE: See page 32 for members of Regional Small Company Committees.)

PERSONNEL

Ray Dalton, Everett, Wash., *Chairman*
Ralph Beck Jr., Honolulu, T. H.
Carl D. Brorein, Jr., Tampa, Fla.
Kenneth L. Dally, Lincoln, Neb.
Walter F. Roberts, Lincoln, Neb.
Adam J. Schwartz, Rochester, N. Y.
Bert L. Steele, Erie, Pa.

PROPOSED NARUC TELEPHONE SERVICE RULES

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Ray Dalton, Everett, Wash.
Herman J. Kleinhammer, Bristol, Tenn.
Kenneth L. Lawson, Lincoln, Neb.

TAX

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Thomas A. Boyd, New York, N. Y.
Judson Large, Chicago, Ill.
Samuel F. Nixon, Westfield, N. Y.
Harlan W. Holmwood, Santa Monica, Cal.

TELEPHONE MERCHANDISING

Toral Duckett, Lincoln, Neb., *Chairman*
Earle G. Bellamy, Knoxville, Ia.
Carl D. Brorein Jr., Tampa, Fla.
R. A. Lumpkin, Mattoon, Ill.
R. Parker Sullivan, New York, N. Y.

TOLL COMPENSATION AND SETTLEMENTS

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Elnathan C. Gates, Minneapolis, Minn.
Alden L. Hart, Kansas City, Mo.
W. C. Henry, Bellevue, O.
Ralph W. Shriner, Tampa, Fla.
D. T. Strickland, Brownwood, Tex.
E. M. Blakeslee, Santa Monica, Cal., *Emeritus*

Sub-committee on Message Toll Compensation

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Lloyd W. Cleveland, Lincoln, Neb.
J. T. Naylor, Kansas City, Mo.
Ralph W. Shriner, Tampa, Fla.
Richard L. Ohlson, Erie, Pa.

Sub-committee on Special Services

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W. F. Corman, Atmore, Ala.
F. E. Norris, New York, N. Y.
Allan R. Stacey, Sunland, Cal.

TRAFFIC

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R. E. Coffman, Marion, O.
Lloyd W. Cleveland, Lincoln, Neb.
D. A. Perigo, Everett, Wash.
Leonard M. Raby, Tarboro, N. C.
F. C. Lickteig, Muskegon, Mich.

BANQUET AND ENTERTAINMENT

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D. H. Deaver, Chicago, Ill.
D. C. Gibson, Chicago, Ill.
W. P. Hollis, Chicago, Ill.
W. J. Pfaender, Chicago, Ill.
R. C. Reno, Chicago, Ill.
Ray W. Smith, Chicago, Ill.
R. B. Wiseman, Galion, O.

MANUFACTURERS EXHIBIT

George Morse, Chicago, Ill., *Chairman*
O. C. Bailey, Chicago, Ill.
D. C. Gibson, Chicago, Ill.
H. F. Lello, Chicago, Ill.
W. J. Pfaender, Chicago, Ill.
R. B. Wiseman, Galion, O.

USITA Representatives in Five Outside Organizations

The United States Independent Telephone Association also maintains representation in five outside organizations, the activities of which concern communications and general business.

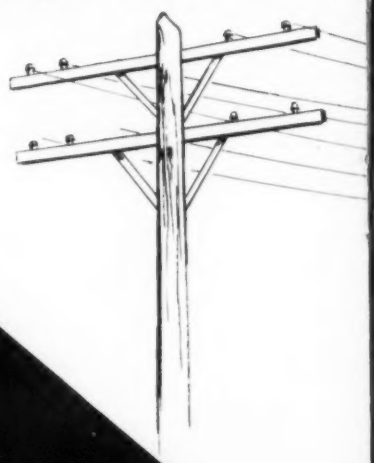
The organizations are:

(1) LIAISON WITH THE DEPARTMENT OF DEFENSE. USITA Military Liaison, Col. W. C. Henry, Bellevue, O.

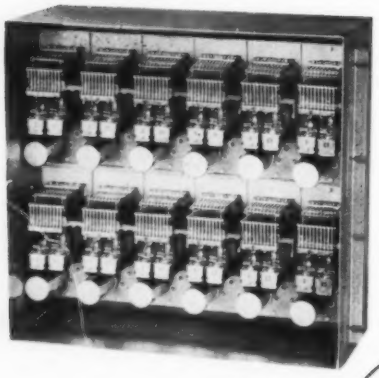
(2) AMERICAN STANDARDS ASSOCIATION. The USITA has indirect representation in the American Standards Association, an organization concerned with the development of industrial standards, particularly with reference to methods of measurement and material specifications. The USITA indirect rather than direct representation arises out of our being treated as a part of a so-called Telephone Group which as such has a direct membership. The Telephone Group consists of the AT&T and the Independents, and its name is merely a name of convenience for the purpose of representation in the American Standards Association.

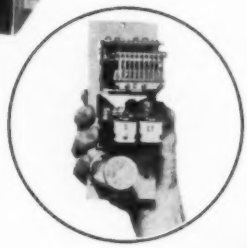
(Please turn to page 32)

For *Modern* Party Line Operation →



Typical relay case
for Ringing Converter





Relative size of
unit assembly of
Ringing Converter

The UNIVERSAL
Code-to-Selective Ringing
Converter employs
simple circuits with the
magnetic impulse counter,
together with other
standard relay apparatus
of recognized
manufacture.

Other UNIVERSAL Telephone Equipment:
UNIVERSAL COMPUTER INTERCEPT
DIGIT ABSORBER for 2-5 Numbering

INDEPENDENT

"EASY TO INSTALL" UNIVERSAL RINGING CONVERTER!*

MODERN SERVICE DEMANDS SELECTIVE RINGING

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T-2-1

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Committee on National Electrical Safety Code (C-2). G. W. Miller, Rochester, N. Y.

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Committee on Radio (C-16). C. H. McLean, New York, N. Y. (Alternate to R. P. Martin Jr. of Bell Telephone Laboratories.)

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(4) RADIO TECHNICAL COMMISSION FOR MARINE SERVICES. Creation of this group arose out of a suggestion of the State Department early in 1947. It deals with marine communications and radio aids to navigation. USITA Representative, R. H. Herrick, Lorain, O. (Alternate to Dr. Austin Bailey of AT&T.)

(5) CHAMBER OF COMMERCE OF THE UNITED STATES. National Councillor, Carl D. Brorein, Tampa, Fla. Committee on Transportation and Communication, R. A. Lumpkin, Mattoon, Ill.

Regional Small Company Committees

These committees work in close liaison with Bell System companies in aiding and assisting small telephone companies; therefore, they are appointed geographically to coincide with the jurisdictions of Bell companies, and are designated as such below:

BELL TELEPHONE CO. OF PENNSYLVANIA

Harold G. Payne *(Chairman)*, president, Murraysville Telephone Co., Export, Pa.
W. M. Gottschall, manager, Carbon Telephone Co., Lansford, Pa.
K. B. Schotte Jr., vice president-general manager, The Kittanning Telephone Co., Kittanning, Pa.
L. F. Shepherd, president, General Telephone Co. of Pennsylvania, Erie, Pa.

CHESAPEAKE & POTOMAC TELEPHONE CO.

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Rodney M. Coggin, president, Tidewater Telephone Co., Warsaw, Va.
Frank A. Hoffman, president, General Telephone Co. of the Southeast, Bluefield, W. Va.
Frank G. LaPrade, president, Lee Telephone Co., Martinsville, Va.
Gerald H. Parks, president, Duncan Telephone Co., Davis, W. Va.

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Donald F. Anderson, manager, Geneseo Telephone Co., Geneseo, Ill.
Harry W. Pike, vice president, General Telephone Co. of Illinois, Springfield, Ill.
Roland Schmidt, president, Home Telephone Co., St. Jacob, Ill.

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Charles D. Ehinger, president, Citizens Telephone Co., Decatur, Ind.
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L. H. Meyer, president, General Telephone Co. of Indiana, Fort Wayne, Ind.
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L. G. Keeper, manager, Rural Telephone Co. of Stockbridge, Stockbridge, Mich.
T. A. Saunders, president, General Telephone Co. of Michigan, Muskegon, Mich.

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T. Clark Callister *(Chairman)*, president, Millard County Telephone & Telegraph Co., Fillmore, Utah.
C. E. Blakeney, district manager, General Telephone Co. of the Southwest, Carlsbad, N. M.
Earle F. Crandall, manager, Pinedale Telephone & Telegraph Co., Pinedale, Wyo.
C. W. Haas, president, Big Timber Home Telephone Co., Big Timber, Mont.
C. M. Hart, manager, Citizens Utilities Co., Kingman, Ariz.
J. Festus Monsen, manager, Aberdeen Telephone Exchange, Aberdeen, Ida.
Floyd L. Reyher, president, Haxtun Telephone Co., Haxtun, Colo.

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Howard W. Chellis, president, Meriden Telephone Co., Meriden, N. H.
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Merle M. Hale, vice president, The Lincoln Telephone & Telegraph Co., Lincoln, Neb.
Charles F. Vail, manager, Milnor Rural Telephone Co., Milnor, N. D.
J. L. Van Horn, president, General Telephone Co. of Iowa, Grinnell, Ia.

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W. C. Henry, president, Northern Ohio Telephone Co., Bellevue, O.
Frank T. Quatman, assistant to the president, The Telephone Service Co. of Ohio, Lima, O.
R. R. Waltz, manager, Delta Home Telephone Co., Delta, O.
Clare E. Williams, president, General Telephone Co. of Ohio, Marion, O.

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Earl R. Dean, vice president, Oregon-Washington Telephone Co., Hood River, Ore.
Maurice R. Hall, manager, Peninsula Telephone & Telegraph Co., Forks, Wash.
W. R. Jarmon, President, General Telephone Co. of the Northwest, Spokane, Wash.
Peter A. Nenzel, vice president, California Water & Telephone Co., San Francisco, Cal.
Willard G. Wade, vice president-general manager, California Interstate Telephone Co., Bishop, Cal.

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John A. Brady Sr., president, LaFourche Telephone Co., Inc., Larose, La.
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F. H. Schafer, secretary, Urban Telephone Co., Clintonville, Wis.

Ill. Independent Manager Steps Down After 24 Years

Mrs. Louise McCreery, of the Mason City (Ill.) Telephone & Telegraph Co., is retiring after 24 years as manager.

Joe Stith, formerly with Faber Industries, has been appointed to the managerial position.

Mrs. McCreery became manager of the company in 1934 following the death of her husband. He had guided the company for the two years preceding his death.

Mr. Stith attended Milikin and Wesleyan Universities. He had been employed as head driver for the fleet of Faber Industries trucks, since 1951.

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

OUR OLD FRIEND, D. J. "Cap" White, president of Everstick Anchor Co., has had over 60 years' experience in telephone and power line construction. We queried Cap as to how the patented anchor happened to be invented and he told us:

"I remember discussing this with Jasper Blackburn, the inventor of the Everstick anchor when I first started working for him. It seems that in his younger days he was a shoe salesman and traveled about the country by horse and buggy. He always carried his lunch and one day he sat down under a tree to eat it near where some linemen were working. He observed they were digging a large slug hole for an anchor. He thought to himself that there ought to be an easier way to set an anchor than by digging a 6-foot hole. He pondered this for some time and one day while jingling $3.00 in his pocket an idea came to him. Why not use the principle of three silver dollars to make a two-way anchor? This was his first invention.

"He made drawings and had a factory fabricate a model. The first attempt, although a rather crude affair, proved that the idea was good. It was later improved and the two-way anchor was developed. Then, sometime later, he developed the four-way anchor. For many years, we had the two-way and the four-way anchors. In about 1930, Blackburn developed the three-way anchor. This proved to be a great improvement over both the two-way and the four-way."

Cap told us also about the time he worked for the old Phoenix Telephone Co. at Steubenville, O. He states:

"Guying methods were very crude as we did not have any modern tools or materials. We would tie a No. 9 iron wire around a rock and throw it in a hole and use this to anchor the guy. Another method was to use the old push pole. With this method, we set a stub about 8 feet in length, 4 feet in the ground, to which we attached the guy. When it was possible to reach a tree, whether it was in line with the pole or not, we fastened the guy to it. They all served a purpose for a time, but usually in a year or two many of the corners gave way and we had to set new anchors and all wires had to be resagged."

Next, Cap told about going to work for the C. D. & P. at Wheeling, W. Va., back in 1900:

"With this company, all construction methods were radically changed from what we had used with the old farmer Independents. All of our anchors were of the log type that made use of an anchor rod equipped with an oval eye. A thimble was used in the anchor rod eye for attaching the guy strand. The anchor hole was dug straight down. When we placed the log, we would trench the side of the hole in an attempt to get the rod lined up in the direction of the pull. This, we were not able to do in all cases. Usually the loose dirt would wedge the log so that it could not be turned. In this case, we bent the rod at the log to an angle of about 45 degrees. This was from all indications satisfactory at the time, but in about a year the rod would straighten under the strain, the guy would slack off, and we would lose the corner.

"The guy was attached to the pole by driving a lag in the back of the pole to hold the guy in place. Then we changed to two lags, one on each side of the pole. We soon found that with the white cedar poles we used that the guy wrap would cut into the pole sufficiently to slack the guy. This method was later improved by the use of shims and guy hooks.

"Then, in later years, the cross plank came into use as an anchor. A 2¼-inch square washer was used on the anchor rod at the bottom of the planks. This did not prove satisfactory as the moisture soon softened the wood and the washer pulled through the plank. We attempted to correct this fault by using a 4-inch square washer, but the cross plank anchor never proved very satisfactory."

Cap states further that down through the years he has observed numerous attempts to use different types of anchors. One company in Massachusetts drilled holes in blocks of granite to accommodate the guy rod and used them as anchors. There is little doubt that this anchor was lasting. Some used old discs and one even used the top of an old Ford engine. A few made use of old flywheels. Most of the makeshift anchors were set in holes dug straight down. A trench was in most cases attempted to line up the anchor rod but this generally was not successfully accomplished. Then in the spring when the frost went out of the ground and the rains set in, the rod would cut through the earth, the guy slack off and the corner would be lost.

Sometime during the teens, the patented anchors came into vogue although they did not come into common use until the late 20's. Various types were tried, but only a few proved satisfactory. The cone, expanding and plate types did prove satisfactory though and solved many of the guying problems. Still there were some who condemned these new anchors for various reasons. Some tried to drill a hole straight down to set the anchors. Others did not cut the wires that held the expanding type together for shipment so that their holding power was not obtained. Still others installed the expanding type upside down and expected the strain of the pull to do the expanding. Of course, these attempts all failed and the anchor—though not at fault—got the blame.

One company Cap worked for in the early days used native hemlock poles which were really hard and tested the skill of linemen. They also used a 12-pin crossarm with white porcelain knobs underneath so that one crossarm carried 18 to 24 wires. This placed a terrific strain on the corners and if the anchors were not good they slacked off and the lines were in trouble most of the time. Cap also mentions native chestnut poles used in Pennsylvania and Ohio. "If you climbed the north side of these poles you found them harder than the hinges of Hades. Climbing the south side was easy if you were careful not to strike one of the numerous knots with a spur," Cap relates.

It is always interesting to learn how many of the items we enjoy and take

for granted today were developed back in the old days when telephone men were forced to do things the hard way. It is due to the cut and try methods of the old-timers, and their untiring efforts in search for better methods that we have many of the labor-saving devices we enjoy today. Cap White was one of the pioneers to whom we owe an everlasting debt of gratitude.

•

It is reported that last year five out of every eight building fires in the United States occurred in the home. Tragically, too, most of the 11,500 deaths due to fire involved old people and children—again, in the home.

•

A fire department workman in Detroit entered a telephone manhole with a lighted torch. The explosion that followed interrupted service on 1500 telephones. We haven't been able to obtain a report on what happened to the workman.

We wonder if this accident could have been prevented had the manhole been ventilated with one of the modern manhole heaters now available.

•

Individual pocket radio sets, manufactured by Stromberg-Carlson, were used at the recent NATO conference held in Paris. Thirty-two members of the conference staff were equipped with "Pagemaster" receivers — about the size of a package of cigarettes, and weighing only seven ounces. These were carried in the coat pocket.

When a person on the floor of the conference was desired, the 'base operator' merely set two dials and closed a switch. Each receiver responds to its own individual coded radio signal. The receiver emits a buzzing noise, notifying the individual that he is wanted. He then goes to the nearest telephone to identify himself to the operator and receive the message.

•

When the Blain family moved into their present residence back in 1941, all the lightbulbs had been placed by the builder. Just the other day, after nearly 17 years of service, the bulb in the garage burned out and had to be replaced. And some people complain of the short life of low-cost lightbulbs!

•

It is claimed that by the time a man learns that money doesn't grow on bushes, he's bushed.

Plant Man's QUIZ

By RAY BLAIN, Technical Editorial Director

Q. We wonder whether you can furnish any information on the dry-type counter-EMF cells which we understand are now available?

A. These new-type cells are selenium-covered metal plates, specially treated so that their resistance decreases rapidly as the current flow through them increases, which makes them effective as voltage regulators. The amount of voltage drop is determined by the number of plates connected in series.

The light weight, portability, safety, and unrestricted range of voltage and current ratings make these cells adaptable for use as voltage regulating elements in numerous applications where wet cells could not be used.

These cells do not give off gases and do not require maintenance or periodic attention.

•

Q. What is the meaning of the term "line load control" as pertains to a dial telephone system?

A. When a disaster strikes a community, it is natural that everyone rushes to their telephone and attempts to make a call. This results in tying up all the trunking and practically no one will get through. Load control is provided by throwing a switch which disables a part of the equipment so that a certain percentage of the lines on a system cannot originate a call. Everyone may, however, receive calls at any time.

Important telephones and perhaps only about 10 per cent of the lines on the system will be permitted to originate calls. With this arrangement, important calls can go through at any time whereas if line load control were not used the telephone system would be useless.

•

Q. What are drainage coils and how are they used on open wire lines?

A. Drainage units or coils are balanced inductor-capacitor networks connected between each side of an open wire communication circuit and ground. These units are generally designed to present a low impedance for 50 to 70 cycles. When open wire communication circuits parallel a high potential power circuit for any distance, a voltage is induced in the communication circuit as the result of the magnetic field surrounding the power conductors. Drainage units provide a low impedance path to ground for these induced currents and limit the voltages. They likewise provide a high impedance for voice currents.

•

Q. Can you advise us when and where the first telephone dials were used?

A. The records inform us that in the early Strowger switching systems, push buttons were used on the telephones to send impulses of current, causing a central office switch to select the called line.

In order to avoid the possibility of error in counting and to cut down on the operations involved, action was initiated to mechanize this push-button operation by substituting a dial for the push buttons. The first dials to be used in a public exchange were installed in Albion, N. Y., in 1896. Though large and cumbersome in contrast with present day dials, this was a remarkable improvement over the push button system previously used.

•

Q. What is considered an economical method of supplying the high voltage for the operation of coin collect and return magnets on telephone pay-stations?

A. There is now available a convenient battery eliminator for this purpose. This unit supplies 120 volts positive and 120 volts negative. The output is adequate for all except the largest exchanges. The rated output is .25 amperes continuous, .60 ampere intermittent. Both the positive and negative outputs can be loaded simultaneously. The unit is housed in a ventilated steel cabinet.

TELEPHONY'S Traffic Engineering Handbook

By Gilbert R. Brackett **Feb. 1, 1958**

Section 10 (Continued)
Equipment Nomenclature

SUBSCRIBER LINE. A communication link between a telephone station, or PBX, and the central office which serves it.

TOLL LINE. A line between central offices in different exchange areas, or cities, which is used primarily for toll calls. The application of this term depends upon the commercial usage of "toll call" and disregards the types of offices connected.

TOLL CIRCUIT. A communication channel between central offices in different exchange areas which is used for toll calls.

INTER-LOCAL TRUNK. A trunk between two local offices disregarding the type of call (local or toll) handled.

INTER-TOLL TRUNK (INTERTOLL OFFICE TRUNK). A trunk between toll switchboards in different offices.

TANDEM COMPLETING TRUNK. A trunk outgoing from a tandem office, tandem switchboard, or tandem position, to a local office or local switchboard.

INTEROFFICE TRUNK. A trunk between two central offices regardless of type. This term has, in the past, been confined largely to trunks between local offices in the same area.

INTERTANDEM TRUNK. A trunk between two tandem offices.

TANDEM TRUNK. A trunk incoming to a tandem office, tandem switchboard, or tandem position, to a local office or local switchboard.

TANDEM TOLL TRUNK. A trunk incoming to a toll tandem switchboard, toll tandem position, or other positions serving toll tandem functions, from either a local or toll switchboard.

TOLL CONNECTING TRUNK. A general classification of trunks between a local office and a toll office. It includes toll switching trunks, recording-completing trunks, recording trunks, and such toll tandem trunks as originate in a local office. It also applies to two-way trunks combining the functions of toll switching trunks and recoding-completing trunks.

TOLL SWITCHING TRUNK. A trunk outgoing from a toll office to a local office used for completing toll calls to subscriber lines served by the local office.

RECORDING-COMPLETING TRUNK. A trunk outgoing from a local office to a toll office used for communications with the toll operator and arranged for completing toll calls originated by subscribers of the local exchange.

RECORDING TRUNK. A trunk outgoing from a local office to a toll office used only for communications with the toll operators and not arranged for completing toll connections.

INDIVIDUAL LINE. A subscriber line arranged to serve only one main station although additional stations may be connected to the lines as extensions.

PARTY LINE. A subscriber line arranged to serve more than one main station. Provision is made for discriminatory ringing with respect to the parties on that line.

MULTI-PARTY LINE. A party line arranged to serve more than four main stations. Although two and four-party lines might be considered as multi-party, they are excluded from this classification.

LONG LINE CIRCUIT. A circuit arrangement designed to extend the range of a subscriber line, PBX trunk, or PBX extension line, with respect to one or more functions such as supervision, dialing or ringing.

PBX LONG TRUNK CIRCUIT. A circuit arrangement designed specifically to extend the range of a PBX trunk with respect to one or more functions such as supervision, dialing or ringing.

DIAL LONG LINE CIRCUIT. A long line circuit designed to transmit dial pulses.

MANUAL LONG LINE CIRCUIT. A long line circuit not designed to transmit dial pulses.

PULSE CORRECTING LONG LINE CIRCUIT. A dial long line circuit which includes pulse correcting features.

PBX TIE TRUNK. A trunk between two PBX's.

DIAL REPEATING TIE TRUNK. A tie trunk arranged to repeat dial pulses.

MANUAL TIE TRUNK. A tie trunk operated on a manual signaling basis, i.e., ringdown or automatic.

RINGDOWN TIE TRUNK. A tie trunk arranged for signaling by means of ringing current transmitted over the trunk.

MANUAL RINGDOWN TIE TRUNK. A ringdown tie trunk requiring the application of ringing current by the attendant.

AUTOMATIC TIE TRUNK. A tie trunk arranged for signaling automatically by connection to or disconnection from the tie trunk. Signaling may be by alternating or direct current.

AUTOMATIC RINGDOWN TIE TRUNK. An automatic tie trunk arranged for ringdown termination.

DIAL SELECTED TIE TRUNK. Any tie trunk arranged to be selected by dial operation.

MANUAL SELECTED TIE TRUNK. Any tie trunk arranged to be selected by manual operation.

DIAL AND MANUAL SELECTED TIE TRUNK. Any tie trunk arranged to be selected by both dial and manual operation.

NUMBER CHECKING TRUNK. The trunk which permits an operator to obtain a check on the calling subscriber number.

VACANT INCOMING MULTIPLE TRUNK CIRCUIT. A circuit for intercepting calls routed in error to vacant incoming multiple terminals.

(Section 10 will be continued next week)

PROVEN PERFORMANCE...

Telephone

North State Telephone Company, High Point, N. C.
Served by Strowger equipment for 38 years!

Lexington Telephone Company, Lexington, N. C.
Served by Strowger equipment for 36 years!

Citizens Telephone Company of Clay County, Brazil, Ind.
Served by Strowger equipment for 30 years!

Northern Ohio Telephone Company, Haskins, Ohio
Served by Strowger equipment for 26 years!

Mankato Citizens Telephone Company, Mankato, Minn.
Served by Strowger equipment for 30 years!

Cuming County Independent Telephone Co., Wisner, Nebr.
Served by Strowger equipment for 29 years!

Newark Telephone Company, Newark, Ohio
Served by Strowger equipment for 46 years!

Northern Ohio Telephone Company, Tontogany, Ohio
Served by Strowger equipment for 26 years!

Home Telephone Company of Ridgway, St. Mary's, Pa.
Served by Strowger equipment for 31 years!

Listed above are only a few of the many Independent Telephone exchanges which have been continuously served by Strowger equipment for over 25 years.

another reason why Men Choose Strowger!

The smart buyer of central office equipment looks for a product with a proven record of dependable service. That's why so many telephone men choose Strowger Automatic. It's a fact—Strowger is the only switching equipment in the world that has records of *over 65 years of continuous performance in the field.* During those years, Strowger has met every new requirement of changing conditions without obsolescence. Visit a Strowger exchange and see for yourself. See the simplicity and flexibility of design that keeps Strowger in service years after other systems are obsolete. Examine the craftsmanship and quality construction of this famous equipment. You'll know why Strowger has a reputation for long wear and dependable service.

YOUR A.E. REPRESENTATIVE is backed by 65 years of systems engineering and documented experience in all types of exchanges. Let him use this vast storehouse of knowledge to help solve your problems. *Write him at Automatic Electric Sales Corporation, Northlake, Illinois. Or, call Fillmore 5-7111.*

AUTOMATIC ELECTRIC

A member of the General Telephone System—One of America's great communications systems

GENERAL SYSTEM

NEW DEVELOPMENTS IN TELEPHONY

Continued from page 22

junction with a Recticharger, the auxiliary charger provides a means of supplementing the power output during peak demand periods, or when the normal load is high for the Recticharger, but does not warrant purchase of a higher capacity charger.

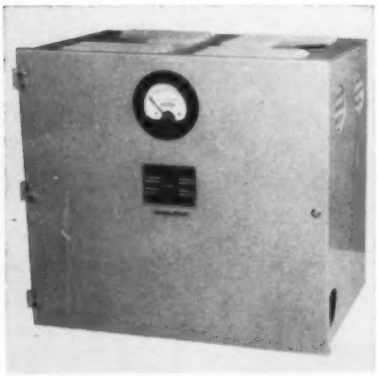

Fig. 8. Auxiliary battery charger.

Connected to the battery and load through a current-sensitive relay (supplied as a separate item), the auxiliary charger cuts in automatically when the demand exceeds the maximum current capacity of the Recticharger. It then drops out when the load falls within the Recticharger rating.

Close voltage regulation of the system is maintained at all times by the Recticharger. The output of the auxiliary charger, like that of the Recticharger, is well-filtered to prevent audible hum in the telephone lines.

Four auxiliary charger models are available with current ratings of 3, 6, 12 and 25 amperes, respectively. "Coarse" and "fine" manual controls are provided for adjusting output current. Input and output fuses protect both charger and battery.

•

Carrier Telephone System (Fig. 9). Up to 16 carrier channels are provided readily by this Type "O" carrier system, the total being comprised of individual four-channel systems, "OA," "OB," "OC" and "OD." These four systems are positioned within the frequency spectrum between 2 and 156 kcs. Each channel is complete with out-of-band frequency shift signaling with several options—ringdown, etc., to meet specific requirements. Channels are also adaptable to speech-plus or telegraph-only operation.

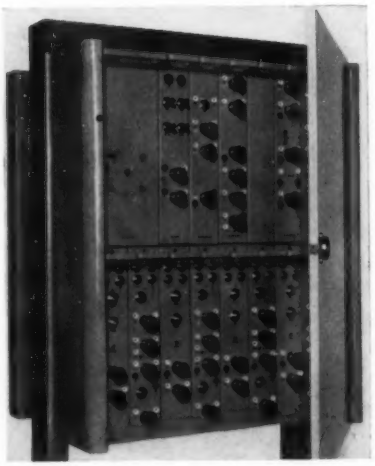

Fig. 9. Carrier telephone system.

Many exclusive maintenance features are built in. For example, a single vacuum tube type is used throughout the equipment. In-service emission tests are facilitated by accessible test points located at each tube socket. This design introduces the "book shelf" construction which permits units to be

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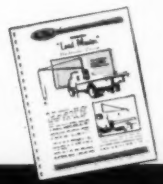
Saves time and manpower because it speeds up loading and unloading jobs... handles work normally requiring several specially-equipped vehicles.

Load-Master lifts a 4000 lb. load with ease... moves it safely and quickly under the most adverse job conditions. Power is derived from a heavy-duty hydraulic pump driven by the truck engine. Controls are located in a position which gives operator full view of the crane at all times.

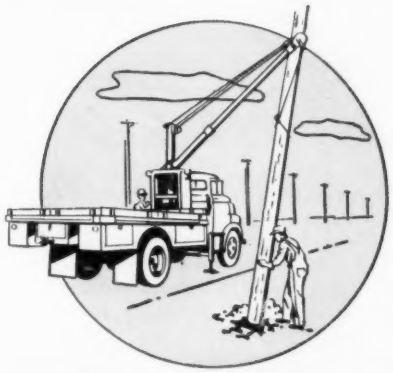
Operator has absolute control of load at all times. The hydraulic system requires intentional movement of control levers before load position can be changed... and the load cannot drop if the truck engine stalls.

OPERATING FEATURES: Telescopic-type hydraulic boom can be spotted at any point from horizontal position to an 85° angle of elevation; hydraulically-powered mast will turn 360° in either direction; specially-designed winch, driven by a hydraulic motor, is grooved to wind cable evenly; hydraulic outriggers, with swivel-mounted foot plates, furnish extra side stability.



Load-Master is ideally suited for use with the Powers-American Series 300 Body shown above. It can also be furnished with bodies of other types... or shipped for mounting in your shop or local garage.

Price information and descriptive literature will be sent upon request.



Load-Master can be used for setting poles up to 45' in length. It requires only 20" of mounting space behind the truck cab. Boom extensions to 22' can be furnished.

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changed just as easily as removing or replacing a book. Inventory advantages are made possible by the use of identical slide-in units in several channels. The number of units normally stocked for maintenance can thereby be reduced.

Each four-channel system is a complete "package"—being contained within a cabinet suitable for rack mounting. The terminals and repeater assemblies include power supply, terminating networks, jack panel, terminal strips for connecting the external wiring, etc. The only accessories required are line filter assemblies and their associated networks. Mounting arrangements, available on an optional basis, permit the units to be installed in either a standard 19 inch central office rack or a pole-mounted cabinet.

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Pulse Code Data Transmission System (Fig. 10). The frequency shift transmission system is designed for the transmission of varying electrical pulses. These pulses can be in any arrangement of pulse duration, number

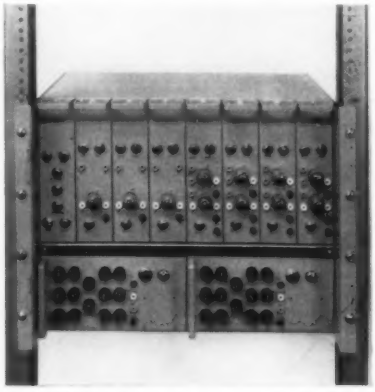

Fig. 10. Pulse code data transmission system.

of pulses, or groups of pulses. It is designed for use in the remote operation of slow or high speed pulse telemetering systems, supervisory control apparatus, pulse code selectors, alarms, etc.

Interchangeable plug-in units using "bookshelf" construction, according to the manufacturer, affords flexibility, easy maintenance and accessibility of components. Individual transmitters and receivers are separate plug-in units.

Circuit failure alarm is optional on all frequency shift receivers. An extra relay provides contacts for operating alarms, fail-safe mechanisms, predetermined restore conditions, or will perform a third function (along with a "space" function) if so desired. This relay operates when no tone is present.

"FM" Trunk Carrier System (Fig. 11). This flexible, narrow-band frequency modulated carrier telephone system is designed for short-haul trunk use. A single control is required to adjust net circuit equivalent. The operating range is 0 to 36 db carrier line

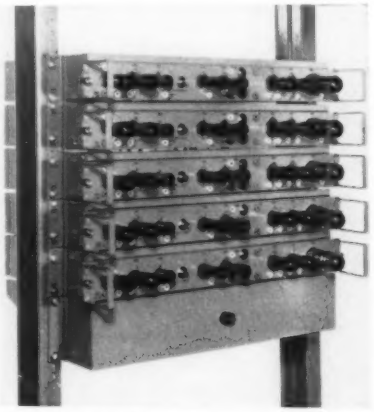

Fig. 11. FM trunk carrier system.

loss. It has full regulation over the entire range. Compensating adjustments are not required. Carrier shift signaling permits continuous carrier transmission to control receiver noise.

The operating frequencies of channels 1 to 5 are located in the 40-190 kilocycle range.

REA Announces Telephone Engineering Appointments

The following appointments in the telephone engineering division, Rural Electrification Administration, were announced on Jan. 20 by Administrator David A. Hamil:

Thomas J. McDonough as assistant chief in charge of sections 4, 5, 6 and 7.

William W. Newman Jr. as assistant chief of the staff engineering group.

The appointees succeed Frederick H. Nolke and Warner T. Smith who have accepted positions in private industry.

Carolina T&T Names Gammons Auditor

Edgar Benjamin Gammons, who has been with the accounting department of the New England Telephone & Telegraph Co. in Boston, Mass., since October 1952, has been named auditor of the Carolina Telephone & Telegraph Co. of Tarboro, N. C.

He replaced P. J. Long, who had been serving as acting auditor since the death of Auditor Robert A. Nelson on Jan. 1, and was with the auditing department of Carolina Telephone before joining New England Telephone & Telegraph Co.

Courts and Commissions

Plan Legislative Probe Of Cal. Commission

Plans to make a study of the operations of the California Public Utilities Commission were decided upon on Jan. 10 by the state senate's interim committee on public utilities.

The committee tentatively scheduled a hearing for February at which commission members will be asked to appear.

"We want to go into the detailed operations of the public utilities commission," Sen. Richard Dolwig, committee chairman, said. "Let's face the facts. Things have become more complicated in the last 10 to 20 years. Let's see if the commission has kept pace with progress in this state."

Sen. Alan Short, San Joaquin County Democrat, a committee member, asked Dolwig whether the committee would go into a contention of the commission that its decisions can be reviewed only by the state supreme court and not by the legislature.

"Those powers of the commission are constitutional," Dolwig replied. "The legislature certainly can introduce a constitutional amendment if it finds such action proper and desirable."

That point in the law was raised earlier at a hearing by the state senate interim committee on governmental administration on the commission issuance of a water permit.

Commission President Peter E. Mitchell declared that only the state supreme court may inquire into the commission's reasons for issuing an order. He explained the law is constitutional and the commission has no choice but to comply.

The senate's committee voted to hire a research man to make a comparison of the California commission operations with those of utility regulatory agencies in other states.

Mo. Commission Grants SW Bell Special Service Raises

The Missouri Public Service Commission on Jan. 17 granted a $735,000 rate increase for special services to the Southwestern Bell Telephone Co. (TELEPHONY, Jan. 11, p. 54).

Basic telephone rates remain unchanged. The increase covers fringe services such as extension cords, push buttons and other extra equipment.

The company said the rate increase would mean $300,000 a year extra revenue after taxes.

About 22,000 Missouri customers out of 875,000 subscribers will be affected by the increase.

Appeal Ark. Commission's Municipal Tax Formula

The formula for figuring municipal franchise taxes to be paid in Arkansas by Southwestern Bell Telephone Co., which was fixed on Dec. 10 by the Arkansas Public Service Commission, on Jan. 15 was appealed to the Pulaski Circuit Court by four cities (TELEPHONY, Jan. 25, p. 47). The four appellants are Little Rock, Pine Bluff, El Dorado and Fort Smith.

The commission made it clear it was not telling the cities how much special tax they could levy against Southwestern Bell. However, it directed that any tax amount in excess of that fixed by the formula should be passed on to subscribers in the city which levies the excessive tax.

It was reported that, basically, the appeal challenges the commission's jurisdiction in the matter.

North Dakota Company Asks To Buy Two Exchanges

On Jan. 28 a hearing was scheduled by the North Dakota Public Service Commission on an application by the United Telephone Mutual Aid Corp. of Langdon.

The Langdon company applied to purchase properties of the Shepard Telephone Co., of Walhalla, and the Rosehill Farmers Telephone Co., of Munich. The United company plans to convert the Walhalla and Munich exchanges to automatic operation.

Utility Reimbursement Law Held Valid in New Mexico

Constitutionality of a 1957 New Mexico law requiring the state to reimburse public utilities for the cost of moving their facilities when necessitated by federal-aid highway construction was upheld by District Judge David Carmody in Santa Fe on Jan. 14.

State highway department figures in-

(Please turn to page 44)

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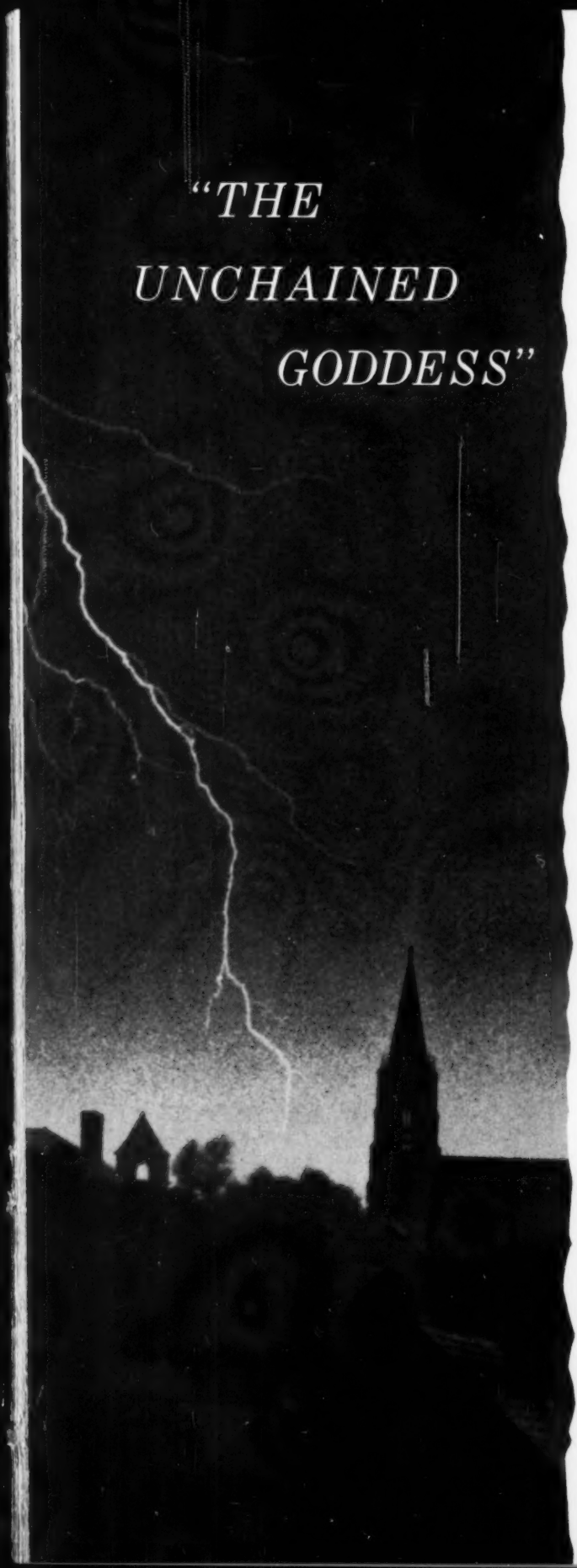

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dicate the decision, if upheld by the state supreme court, will cost nearly 9 million dollars over the 13-year life of the federal-aid highway act. The federal government will pay most of the utility reimbursement costs, under the plan, but the state highway commission opposed the law on the grounds it would reduce the amount of funds available for highways.

Judge Carmody's opinion was handed down on four separate cases consolidated for trial. They were the State Highway Commission vs. Mountain States Telephone & Telegraph Co., Southern Union Gas Co., Ruidoso Telephone Co., and a second Southern Union Gas Co. case.

Lawyers fighting the reimbursement law argued it was unconstitutional on several counts, including the contention it violated a state constitutional section prohibiting the state from making any donation to any person or corporation.

"In my opinion," Judge Carmody said of this contention, "it is a matter for the legislature to determine as to what are and are not compensable damages. The legislature, by this act, has not determined that relocation is a compensable damage, not one in which a profit can be made, but merely a reimbursement statute for expense which would otherwise have been borne by the various users of the utility services within the state."

Also rejected by Judge Carmody was a contention that the law violated a constitutional section which prohibits the legislature from extinguishing any liability or obligation owed to the state.

"With respect to this point," he wrote, "the court is of the opinion that the constitutional provision contemplates fixed or liquified claims, and it is hard to see how there is any obligation or liability on the part of any of the utilities concerned which amounted to a fixed or liquidated claim owing to the state of New Mexico.

"The so-called common law principle placed the burden of relocating utility lines on the utility, but it did not create any obligation or liability running from the utility to the state; therefore, in the court's opinion the legislature has a right to change such a policy at any time it feels that right and justice so dictate."

Another opposition contention was that the act was unconstitutional because it "extends the provisions of a federal act which refers to its title only."

"Briefly," Judge Carmody said, "it is the opinion of the court with respect to this that such a reference, if it were to alter positive or substantial substantive rights of the parties, would then violate our constitution, but that in this case the reference is actually only as to a procedural matter and as such does not violate the constitution."

Judge Carmody wrote in conclusion that he felt "that basically the statute is constitutional and that it is an announcement by the legislature of a change of policy in line with the needs of the time and the equities involved."

Maine Increases Funds For Relocation Costs

A special session of the Maine Legislature enacted on Jan. 16 a bill increasing from $12,500 to $43,000 a year funds available for the current biennium to meet the state's share of the cost of reimbursing utilities for expenses incurred in relocating their facilities to accommodate federal-aid highway construction projects.

The measure also included municipally-operated utilities under provisions of a 1957 act which provided for reimbursement of privately operated utilities. The federal government pays 90 per cent of the cost of such reimbursements. Total cost of such reimbursements throughout the state on the basis of current state highway commission planning would approximate $859,953.

Cut Canadian Bell Rate Increase

A request for $24,200,000 in rate increases by Bell Telephone Co. of Canada was trimmed to $10,318,000 by Canada's Board of Transport Commissioners, it was reported on Jan. 13.

The board allowed the company an average 3 per cent increase in rates instead of the 7 per cent increase requested.

U. of Wis. Dorm Managers Protest Business Rates

Members of the University of Wisconsin Independent Housing Association argued before the Wisconsin Public Service Commission on Jan. 10 that the Wisconsin Telephone Co. is not justified in charging operators of student boarding houses in Madison business telephone rates rather than residence rates.

The company countered in defense of its 1956 action requiring houses with six or more students to pay $10.75 per month for one-party business service rather than $5.00 for one-party residence service.

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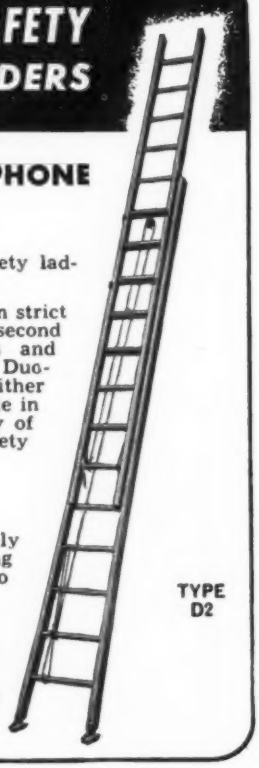

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according to the company, are charged business rates, and Wisconsin Telephone said it believed that rooming houses with from six to 55 students also ought to pay business rates.

The hearing was postponed until transcripts of the Jan. 10 testimony could be prepared.

John O. Walch, Wisconsin Telephone Co. general commercial engineer, said that the company itself, under interpretation of its tariffs, made the decision to charge rooming houses business rates and that the commission had nothing to do with the decision.

Mr. Walch said that the use to which a telephone is put and its location determines whether it is a business telephone, and in the case of large rooming houses where many students make use of the telephone as guests of the proprietor, the telephone is a business telephone.

He also mentioned that the city of Madison assessed these places as businesses rather than as private residences.

Before this year, Walch pointed out, the University of Wisconsin required free telephones in approved residences. It no longer does and therefore rooming house owners can now put in pay telephones.

Authorize Stock Issue By N. C. Central Telephone

Central Telephone Co., Mount Airy, was authorized by the North Carolina Utilities Commission on Jan. 22 to sell 27,000 shares of its $10 par value common stock (TELEPHONY, Jan. 25, p. 52). Proceeds from the sale will be applied against cash requirements in 1958 totaling $3,850,000.

The shares will be sold at $1.00 less than the over-the-counter price on the day before the sale and must bring in at least $17.50 per share.

The company plans to use the money raised through the issue for expansion and improvements.

It serves about 27,000 subscribers.

OKs Two Ohio Financing Plans, Hears Rate Plea

The Ohio Public Utilities Commission has approved the following two financing plans:

On Jan. 16 the Paulding Telephone Co. was authorized to issue stocks, bonds, notes and other evidences of indebtedness following a finding that the company had a balance of uncapitalized capitalizable expenditures amounting to $159,206.19.

On Jan. 14 Home Telephone Co. of Fairview secured permission to sell 300 shares of 5 per cent $100 par cumulative preferred stock. The stock is to be sold for not less than the par value and the proceeds are to be used for construction in the Cumberland area.

•

The commission, at approximately the end of December, 1957, completed its investigation of the rate application of The Northern Ohio Telephone Co., Bellevue (TELEPHONY, Dec. 1, 1956, p. 55).

The investigation shows that the rates the company is seeking to charge will provide a return of $2,036,319.74, and a rate of return of 5.95 per cent of the value of the rate base, determined by the engineers to be $34,219,548.

The rate base method used was that of reproduction cost new, less depreciation. The determination follows:

Reconstruction cost new of the company's physical properties	$40,091,164
Deductions for observed depreciation (16.01 per cent)	6,416,616
R.C.N. less depreciation	$33,674,548
Allowance for working capital and for maintenance material and supplies	545,000
Total rate base valuation	$34,219,548

United of New Jersey Asks Stock Authority

United Telephone Co. of New Jersey, Newton, on Jan. 20 requested permission of the New Jersey Public Utilities Commission to issue 80,000 shares of $10 par common stock.

The stock would be issued to United Utilities, Inc., Abilene, Kan., parent of United of New Jersey, and would be in repayment for $800,000 advanced by the parent company for purchase and installation of automatic equipment.

Asks for Raise in Oregon

Oregon Public Utility Commissioner Howard Morgan has set Feb. 11 as the date for hearing the rate increase application of the Fossil Telephone Exchange.

Ask Stock OK In Mo.

On Jan. 23, the Meramec Telephone Co., St. James, filed an application before the Missouri Public Service Commission for authority to issue 1500 shares of preferred cumulative stock.

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"Ability is a poor man's wealth."—MATTHEW WREN.

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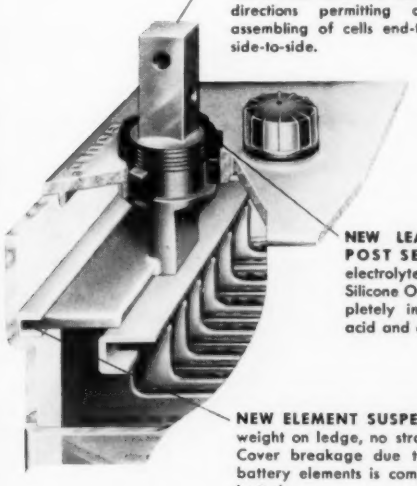
HIGHER IMPACT RESISTANCE, TOO. Normal handling shocks and shipping abuse will not harm the new Plastrite Jar which has a higher tensile strength.

NEW STRONGER POSTS assure full current carrying capacity, maximum voltage from cell to cell at all times. Also note bolt holes in two directions permitting convenient assembling of cells end-to-end or side-to-side.



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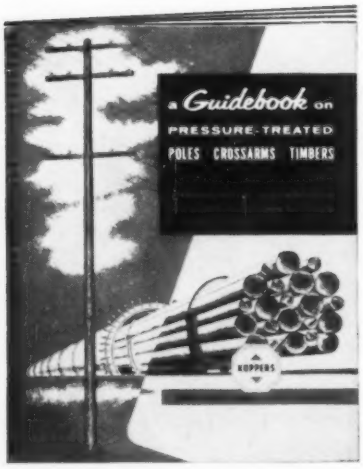

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- Poles, Crossarms, Timbers
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THE OPERATOR'S CORNER

Concluded from page 28

realize the importance of the operator's work. She serves in the true spirit of humanity."

Traffic Questions

(1) On messenger calls, after ticket details have been passed to the TTC, should the circuit be held until the messenger charge is determined and given to the calling party?

(2) How are reports of party delay passed on messenger calls?

(3) On a call from a coin station on a two ticket collect call to a coin telephone, if the charge is not accepted and the calling party will not pay for the call and a report charge applies, how should the operator proceed?

(4) How should the operator proceed in arranging for messenger service?

(5) If no regular messenger service is available, how should the operator proceed?

(Answers are presented on page 54.)

General Telephone Names Two to Public Relations Posts

Robert J. Wachter has been appointed public relations director for General Telephone Co. of the Southeast. He will make his headquarters at Durham, N. C. The appointment, effective Mar. 1 was announced by Donald C. Power, president of General Telephone Co.

In another public relations assignment, Robert F. Williams will take over as public relations director of the General Telephone Co. of the Northwest, as of Mar. 1.

F. J. Turner Retires As Southern Bell Chairman

Fred J. Turner on Jan. 31 retired from an active 50-year career with the Southern Bell Telephone & Telegraph Co. He stepped down as chairman of the board of Southern Bell.

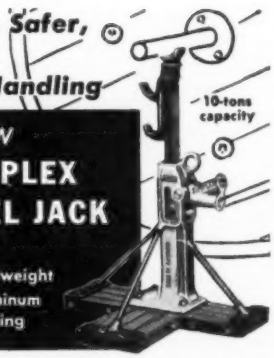
But he will continue to be active in civic and public affairs in Atlanta and the South.

He also will continue as a member of the Southern Bell board.

Record Expenditures

The U. S. Department of Commerce reports that construction, equipment and new plant expenditures in the communications industry, which covers telephone, telegraph and international communications companies, are expected to show a record total of 2.9 billion dollars for 1957, a jump of 12 per cent over 1956. A slight drop, to 2.5 million dollars, is forecast for 1958.

Here's Safer, Easier, Reel Handling



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Pole Pulling and Straightening Jacks—Save time, cut work crews necessary to pull, straighten or move poles. No. A-1538 has aluminum housing, 15-tons capacity, weighs 63 lbs.

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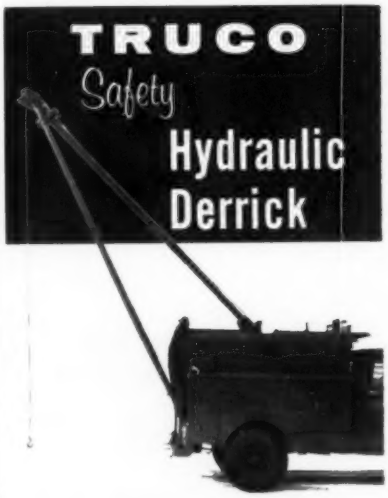
TRUCO Safety Hydraulic Derrick



- TRUCO safety Hydraulic Derrick "middle leg" allows simple, fast, safe one-man operation.
- Simple Hydraulic cylinder in "middle leg" makes Derrick a "Live" boom.
- Converts to powerful pole jack. Unique folding mechanism permits greater use of space in rear of body.

TRUCO TRUCK Equipment CO.
3963 Walnut Street
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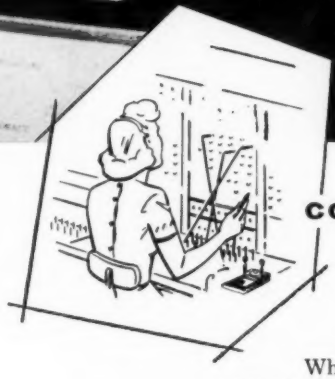

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Busy telephone operators are finding the new Calculagraph 60-minute dial *easier to use* and they can now handle more calls more efficiently.

Why? Because they don't have to remember to stop and add 30-minutes to long conversations. This new 60-minute Calculagraph dial does it for them.

This new Calculagraph 60-minute dial assures you, too, of *all charges* due on every call. If you now have 30-minute dials, you can convert your Calculagraphs to the 60-minute dial.

Whether your needs can be met with either the 30-minute or 60-minute dial you can be assured of *100% accuracy* on *all toll calls* with Calculagraphs on *your* switchboard.

Write today for complete information.

CALCULAGRAPH Company

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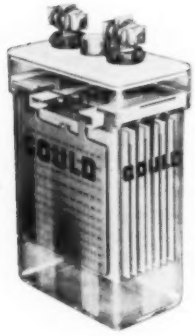
THE LINE SUPPLIES YOU NEED

The Type XB Unprotected Cable Terminal features a Bakelite faceplate and insulating fanning strip molded in one piece, with Everdur studs positioned for easy wiring. Available in 6, 11, 16, and 26 pair size, with or without cable stub.
COOK ELECTRIC COMPANY.

Vibration Dampers used on wire adjacent to insulators on pole to prevent fracture from fatigue caused by wind vibration. Made of flexible polyethylene, and helically slit with approximately three turns to the foot.
DETROIT MACOID CORPORATION.



Outstanding Battery Performance is yours when you choose Gould Planté Batteries. Thick, grooved, pure lead positive plates give many years of trouble-free service! Made by GOULD-NATIONAL BATTERIES, INC., the finest money can buy.

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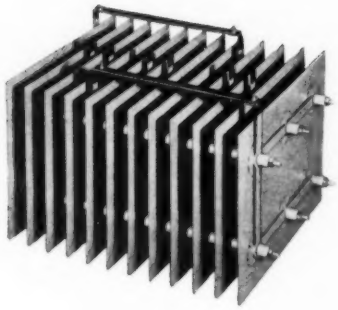
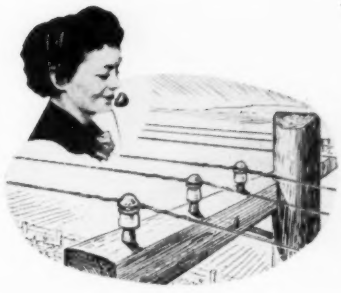


Lorain Dry CEMF Cells—Lorain's important new product for eliminating telephone office maintenance associated with liquid filled cells. Light in weight, portable, safe, completely flexible as to voltage and current ratings.

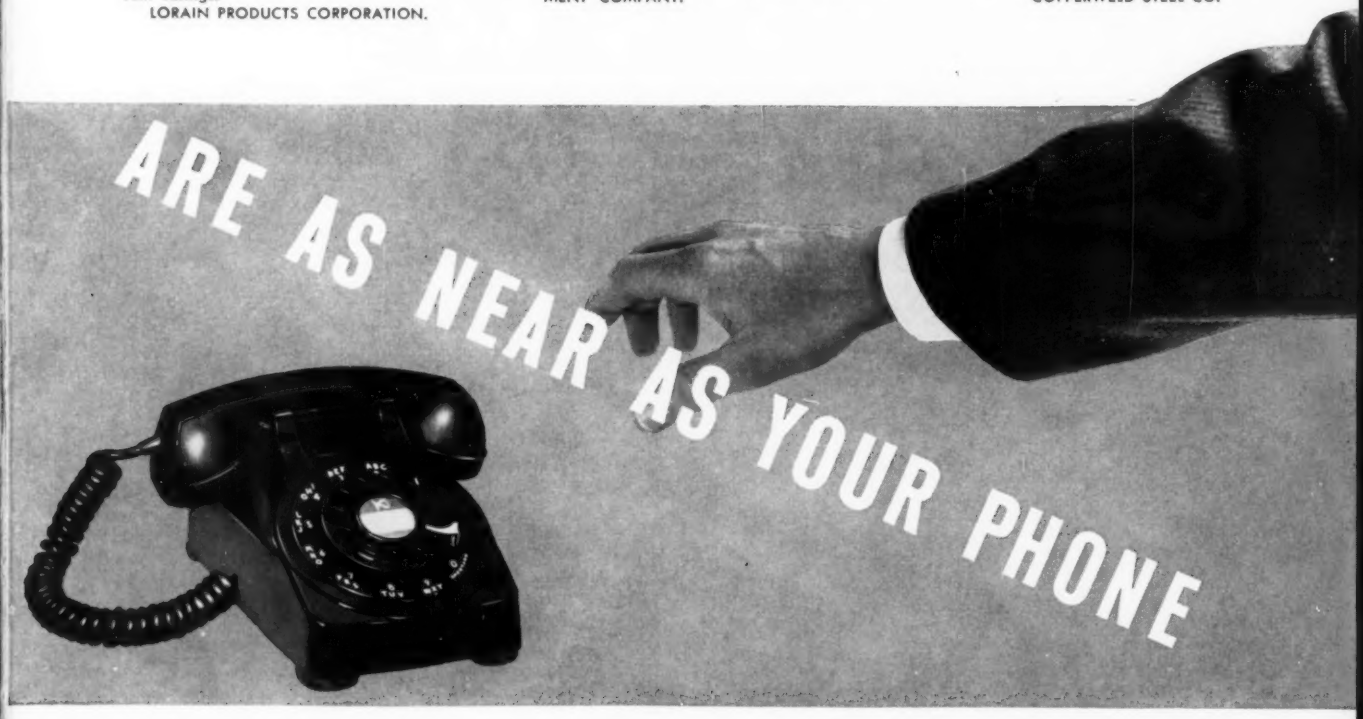
LORAIN PRODUCTS CORPORATION.

Cable Placing Shoe—used for guiding cable in raising the cable from the reel to the strand. Strong but light in weight—made of cast aluminum with steel arms and rollers. Locking pins keep shoe on strand. Made by CABLE SPINNING EQUIPMENT COMPANY.



Copperweld Talks Better than any other high-strength conductor. Strong, nonrusting, easy to string, it's unequalled for long-life, long-span construction. Use .080"—30 E.H.S. for short subscriber loops and secondary toll line:—and .104"—40 H.S. for toll lines and long subscriber loops.

COPPERWELD STEEL CO.



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The Time-Tested Steel Strand. A ductile, adherent zinc coating, applied by the famous Crapo Galvanizing Process, provides lasting protection against corrosion in INDIANA STEEL & WIRE COMPANY'S Crapo Steel Strand. Minimum maintenance expense.

Kellogg's Standard Outside Plant Handbook now available at special price while quantities last. Reduced to $2.75 a copy, with ten or more copies priced at $2.50 each. Every phase of outside plant telephone pole line construction is covered in book.

John Garbutt, Inside Sales—Rochester, likes to get to the bottom of things.

On top of the situation . . . from below

You can see that John Garbutt of our Rochester sales office won't hesitate to go underground or do anything else necessary to make sure your supply orders are properly serviced.

John and all the other members of our nationwide distribution setup make it their business to get to the bottom of your needs for construction and maintenance supplies. Years of experience have taught them that you have 4 principal requirements.

They are: quality products, fast delivery, personalized service, and careful attention to all orders, regardless of size.

This kind of thinking is typical of a company that operates a full-time research program to bring you new and better telephone equipment. Your supply orders help us keep this program going and growing.

Do you have a supply problem that needs careful attention? Try the Stromberg-Carlson branch office in your area.

In Rochester our Sales Office and Warehouse is located at
1040 University Avenue
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A DIVISION OF GENERAL DYNAMICS CORPORATION
SALES OFFICES: Atlanta 6, Chicago 6, Kansas City 8, Rochester 3, San Francisco
Electronic and communication products for home, industry and defense

IN THE NATION'S CAPITOL

Concluded from page 19

made up of elected representatives of our rank and file, meeting in a spirit of maturity and responsibility, will avoid the danger of a wage-package that would kill the goose that laid the golden egg." He expressed certainty that the committee would seek attainable objectives based on recognition that the Bell System was a public utility dependent on rates fixed by federal and state regulatory bodies.

Be that as it may, the proof of the pudding will be in the eating. The selection of Prof. Joseph R. Rose, chairman of the Department of Public Utilities at the Wharton School of Finance of the University of Pennsylvania, to lecture the committee on the economics and operations of utility rate regulation, is interesting. Dr. Rose has not been noted in the past as favoring an exactly openhanded policy for granting utility rate increases. But his authoritative position in the field is distinguished and generally acknowledged. We shall see what we shall see.

California Independent Provides DDD Service

The Coachella Valley Telephone Co., Indio, Cal., has climaxed a $500,000 expansion and improvement program by providing its subscribers with Direct Distance Dialing (DDD) service.

Included in the half million dollar project is a new toll center in Indio adjacent to the existing Indio central office, which has been enlarged.

Three generations of Newmans take part in cut-over to Direct Distance Dialing at Indio, Calif. by the Coachella Valley Telephone Co. J. W. Newman (center), president, is pictured with his son J. C. Newman (left), manager, and grandson, Michael Newman (right).

The company installed Type DB SATT with operator identification and an eight-position toll board. DB service can be converted to Type B operation at any time in the future by adding necessary detection equipment.

With the new service, all subscribers of the Coachella Valley exchange can dial direct to any point which can accept this dialing on a 2-5 numbering basis. The entire network is equipped to accept inward toll dialing via the Bell toll network when inward dialing facilities are available from the Los Angeles and San Bernardino 4A tandem offices of the Pacific Telephone & Telegraph Co.

Ground was broken for the new Indio toll center early in 1957. Many improvements were made to the company's outside plant, and all offices have been converted to terminal-per-station operation.

Issue Third Edition Of Appraisal Manual

The American Society of Appraisers, a national organization of appraisers and valuation engineers, has issued its third completely new "Appraisal and Valuation Manual," a source book of the latest information on the solution to appraisal and valuation problems encountered in business and government.

The 500-page manual contains more than 40 new technical studies.

The studies in the manual comprise a wide range of topics related to every phase of valuation and appraisal in all branches of real estate, architecture, building construction, public works, engineering, insurance, accounting, law, taxes, assessments, banking and finance, public utilities, industry, commerce, fine arts and antiques, plus every facet of government. Among the manual's contributions are studies entitled: "Appraisal of Utility Property for a Prospective Purchaser," and "Depreciation for Public Utilities," as well as others.

A feature of this volume is its bibliography of reference books useful to appraisers and valuation engineers.

Further additions have also been made to the section on "words and phrases" related to the work of the appraiser as expressed in formal court opinions.

Complete information may be obtained from the American Society of Appraisers, manual division, 369 Lexington Ave., Suite 1105, New York 19, N. Y. The price of the manual is $15.

How to stay on top of special needs

You have many subscribers whose needs are special—people who need something out of the ordinary to make their telephones more useful. We can help—here are two good examples taken from among the products we handle:

HANDS-FREE TELEPHONE: much more than just an instrument to provide conversation without the need to hold a handset, this telephone is superior to others on the market because (1) it takes less than 15 minutes to install; (2) it gives the user privacy; (3) its microphone is separate and non-directional; you can place it wherever convenient.

RECEIVER-AMPLIFIER RA-1000: this compact, transistorized device provides improved telephone service for the hard-of-hearing. It also boosts signal strength on long-distance calls or on conference hookups. It is compatible for use with any standard telephone, desk or wall-mounted.

The Stromberg-Carlson Branch Office and Warehouse in your area has these and other special-application instruments in stock.

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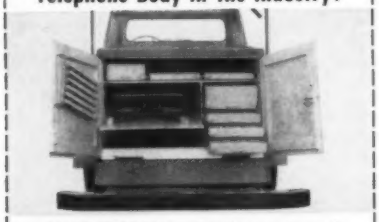
SERVES THE TELEPHONE INDUSTRY!

Stahl Side Boxes — convert pick-ups into efficient Service Trucks.

Stahl TMI-76 — Lowest-cost Telephone Body in the Industry!



Stahl TMI-76 — Engineered and built to rigid specifications.

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MAIL THIS COUPON TODAY FOR COMPLETE INFORMATION & PRICES!

Check product in which you are particularly interested.

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Litterbugs Learn Lesson

"Certain California judges have adopted special policies toward litterbugs.

"When a culprit is hauled into their courts for littering the roadside with beer cans, sandwich wrappers, and such, these judges do not impose a fine. Instead they sentence the guilty motorist to a term—ranging from a few hours to a few days—of picking up trash along the highways." — JOHN FISCHER, *editor, Harper's Magazine.*

Answers To Questions On Page 48

(1) Yes.

(2) Reports of party delay are passed by the TTC to the OTC and thence to the calling telephone.

(3) The operator will secure a deposit of the report charge and draw a line through the entries in the "collect" space on the toll ticket.

(4) The operator will reach the messenger agency nearest the address involved, and say, "This is Long Distance. I have a messenger call for you," and when the messenger agency is ready, say, "Please have Mr. (called party), (street address), (called place, if necessary) call operator (spec. lw no.) at (OTC) and ask for (calling number). Tell him that Mr. (calling party) is calling him. If Mr. (called party) is not there, leave word (or 'do not leave word')."

Ask "How soon will messenger return, please?" and enter "psd to (tel. no. of mg agency) (time required for mg service) (time)" in the space for reports.

Ask the agency to call operator (spec. lw no.) as soon as the messenger returns, enter the time he is expected to return as the subsequent attempt time, and release the messenger agency line.

(5) As locally directed, secure the services of any available person, such as a school boy, an operator not on duty, a customer known to deliver messages, etc. If the address is in a tributary office area, reach the local chief operator and ask if she knows some one who may be sent or may send to the address involved. In arranging for the service, the operator will proceed in general as though she were dealing with a regular messenger agency.

Stewart

TEST EQUIPMENT

Locates Trouble FAST

MODEL A—Locator-Tester

MODEL D-1—Midget Detecto-Meter

MODEL E—Exploring Coil Amplifier

MODEL G —Dual Electrolysis Voltmeter

MODEL H—Lineman's Test Set

MODEL J—Transistor Oscillator

MODEL L—Cable Tester

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Division of Instrument Laboratories
Chicago 10, Illinois

SAVE TIME and MONEY! WITH A 6" FIELD RANGE FINDER

. . . Widely used by 'Phone and Utility Companies

Speed erection and maintenance of Telephone and Utility lines with this 6" Field Range Finder. Measure line clearance, spacing and sag from the ground. Measure distances from 8 ft. to 100 ft. with accuracy to within 2%. Especially useful for inaccessible objects and places. These are sturdily built instruments . . . of such compact size they're easily carried in pocket. Dependable for years of trouble-free service in rugged use. Available in two models —Direct Vision and Overhead Prism. Each supplied with a top-grain genuine leather carrying case. Order by Stock Number (open account to rated firms).

Stock No. 50,137-DL Direct Vision Model. . $32.50
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Write for FREE CATALOG—DL

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General Service Names Hamm Commercial Head

W. J. Hamm, vice president of General Telephone Co. of Michigan, has been appointed commercial director in the operations department of General Telephone Service Corp. in New York. The reassignment, effective Feb. 15 was announced by General Telephone's president, Donald C. Power.

Mr. Hamm succeeds D. E. LaMaster who has been assigned to assist R. Parker Sullivan, vice president, merchandising.

Florida Tel. Converts; Has Big Growth Since War

Florida Telephone Corporation of Leesburg, Fla., which is five times larger than it was at the end of World War II, on Jan. 19 converted another 5,000 Leesburg subscribers to dial operation, when it cut into service new crossbar equipment manufactured by North Electric Co.

Now ranked 25th among the nation's 4,400 Independent telephone companies, Florida Telephone had only 7,600 telephone subscribers and 74 common stockholders at the end of 1945. Today, the company, which serves eight counties in central Florida's citrus belt, has more than 38,000 subscribers and about 2,200 stockholders.

The company's rapid growth, which has featured a broad modernization program, has given Florida Telephone a unique distinction in financial circles. Twenty-four separate financing transactions, including 12 bond issues, two preferred stock issues and 10 offers of common stock, have been utilized to raise more than 15 million dollars in new capital since World War II. The company's current assets of nearly 20 million dollars are more than 10 times higher than they were 12 years ago.

Marketing Group Holds Utilities Seminar Feb. 13

"The economic potential of the United States by 1970—a look at the future economy of the country"—will be one of the opening discussions at the American Marketing Association's fourth annual Public Utilities Seminar, February 13 in the Warwick Hotel, Philadelphia.

Public utilities executives from all over the country will hear Lyford N. Greene, supervising statistician, American Telephone & Telegraph Co., New York, the opening speaker, project the effects of increases in population, labor force, and other factors on the market for consumer goods by 1970.

Theme of the seminar is "Marketing

INVESTIGATE

The Unique Kellogg Volunteer-Fire-Call System

Adaptable To Any Type Community Dial Offices

No duplication of facilities! The Kellogg *Volunteer-Fire-Call System* is as dependable as your present phone system because it uses existing lines and phones. No special servicing—no failure because of long periods of disuse.

- **No restriction as to ringing frequencies on party lines.**
- **Works with any type of equipment.**
- **Automatically rings up to 10 firemen from originating call.**
- **Identifying . . . continuous ring.**
- **Provides emergency warning tone on busy lines.**
- **Optional—"Meet-Me" conference circuit.**
- **Optional—Day-Night switching circuit.**
- **Proved reliable through years of continuous service.**
- **Easy universal wall mounting. Compact size 40″ x 18″ x 10¼″.**

Phone your nearby Kellogg representative for complete information.

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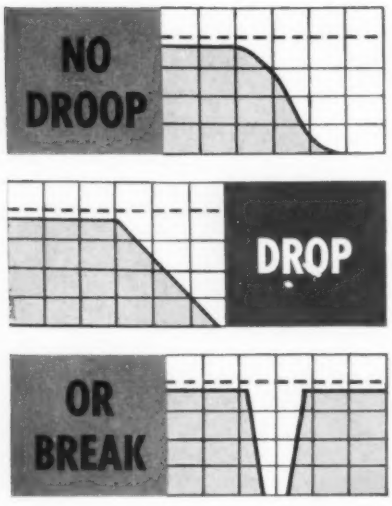

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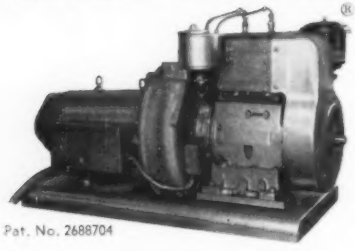

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Stable
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Micro-Power operates *with* the main source of power. No time consuming "load transfers." No "power outages" *even for precious seconds!*

Micro-Power Units are available in 1500, 3000, 5000 and 10000 watt capacities. For complete information, specifications, and demonstration, write . . .

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Research for Public Utilities—Objectives and Results."

Membership in the American Marketing Association is not required to attend the sessions.

Members of various "how to do it" panels include J. L. Curry, supervising statistician, American Telephone & Telegraph Co., New York; A. D. Herbst, public relations manager, research and studies, the Bell Telephone Co. of Pennsylvania, Philadelphia; and James E. Osgood, marketing research supervisor, photo lamp division, Sylvania Electric Products Inc., New York City.

Reservations for the seminar may be made through David M. Ogden, the Bell Telephone Co. of Pennsylvania, 1835 Arch St., Philadelphia 3, Pa.

Pilloud Retires After 52 Years of Service

R. E. Pilloud has announced his plans for retirement from active management of California-Pacific Utilities Co.'s telephone operations in Nevada on Jan. 31. However, he will remain on a consultant basis with the company.

Mr. Pilloud has just completed his 52nd year in the telephone industry. He first went to Elko, Nev., from Colorado in 1927 to organize and develop the local telephone system. Employment in the telephone business started in 1905 with Colorado Bell Telephone Co. He worked as a lineman, installer and manager until 1911 when the Colorado company was consolidated with the Rocky Mountain Bell Telephone Co. and the Arizona Bell Telephone Co. under the name of Mountain States Telephone Co. He was transferred from the traffic department in Denver to New Mexico as district manager prior to going to Elko in 1927. Since August 1952, when California-Pacific Utilities acquired the Elko County Telephone Co., Mr. Pilloud has continued as manager.

American Creosoting Names H. W. Foster to Sales Staff

The American Creosoting Corp., a wholly owned subsidiary of Union Bag-Camp Paper Corp., on Jan. 20 announced the appointment of Harry W. Foster to its sales staff.

Mr. Foster has been a member of the Amcreco organization since 1913 and has worked in all phases of the company's operations. Mr. Foster's sales activity in the wood preserving field will be concentrated in Kansas, Nebraska, Iowa and northwestern Missouri.

MAGNOLIA GLAYZIT
Telephone Refinisher
POLISHES

Cleans, revitalizes, preserves the surface! Dustproof—polish can't come off on cloth when dusting. Only dust comes off! Restores cabinet-maker's finish to furniture! Adds years to life of any finished surface! Supreme for telephones.

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CLAY CONDUIT

The proved and standard protection for Underground Telephone Cables. Highest quality and full line of shapes.

NATCO CORPORATION
327 Fifth Avenue, Pittsburgh 22, Pa.

New Leich Representatives In Texas and Minnesota

D. C. Gibson, president of Leich Sales Corp., announces the appointment of new sales representatives for the states of Texas and Minnesota.

C. F. NORSCH

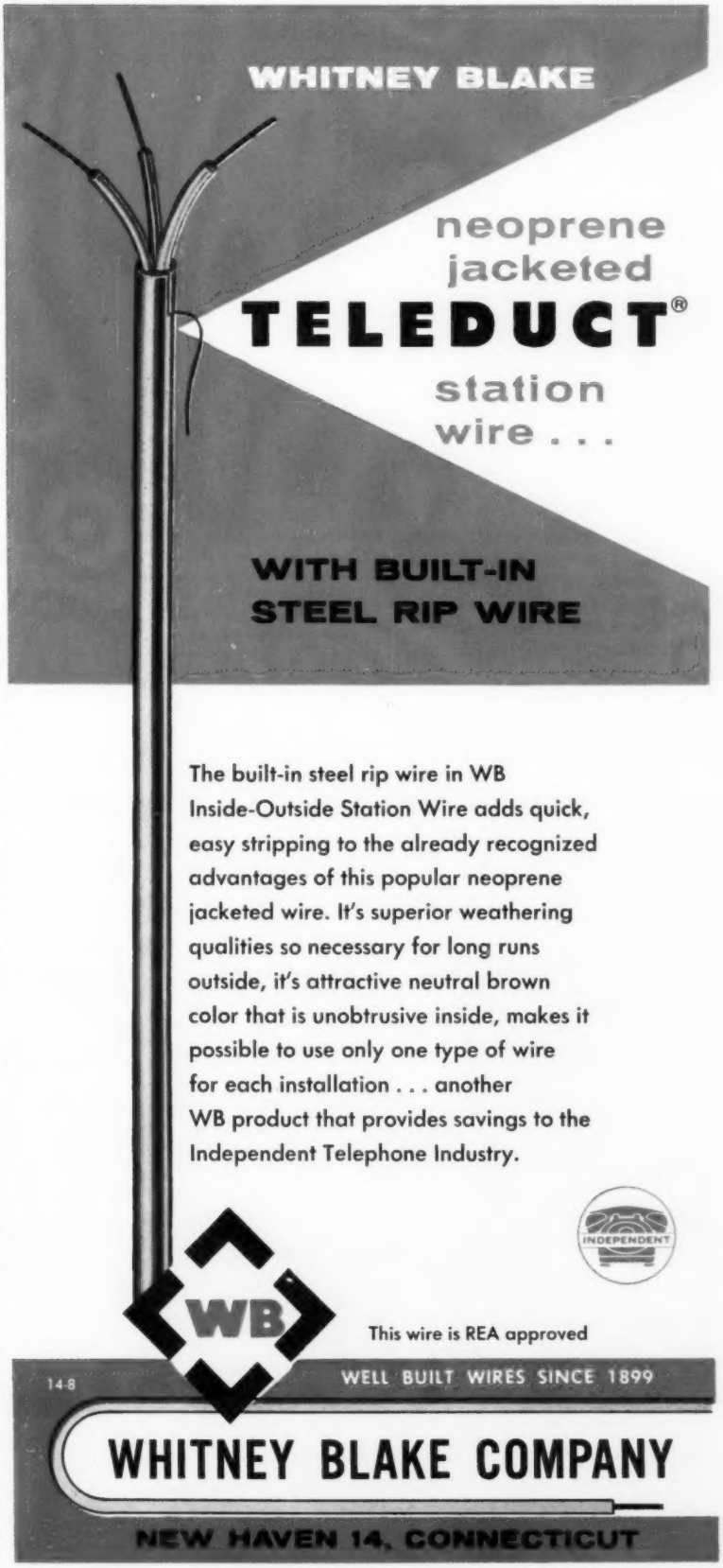
These appointments, according to Mr. Gibson, are the latest steps in Leich's expansion program. They represent the fourth and fifth new Leich salesmen added in recent months.

Charles F. Norsch is the new representative in Texas. He has been as-

E. C. VICK

sistant to the Manager of the southwestern district in Leich's Dallas office for over four years.

E. C. Vick, will represent Leich in Minnesota. After a training period in Leich's Chicago office, and the company's Genoa, Ill., plant and warehouse, he will be calling on telephone companies.


WHITNEY BLAKE
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WITH BUILT-IN
STEEL RIP WIRE
The built-in steel rip wire in WB Inside-Outside Station Wire adds quick, easy stripping to the already recognized advantages of this popular neoprene jacketed wire. It's superior weathering qualities so necessary for long runs outside, it's attractive neutral brown color that is unobtrusive inside, makes it possible to use only one type of wire for each installation . . . another WB product that provides savings to the Independent Telephone Industry.
INDEPENDENT
WB
This wire is REA approved
14-8
WELL BUILT WIRES SINCE 1899
WHITNEY BLAKE COMPANY
NEW HAVEN 14, CONNECTICUT

Finances Conversion By Local Stock Sale

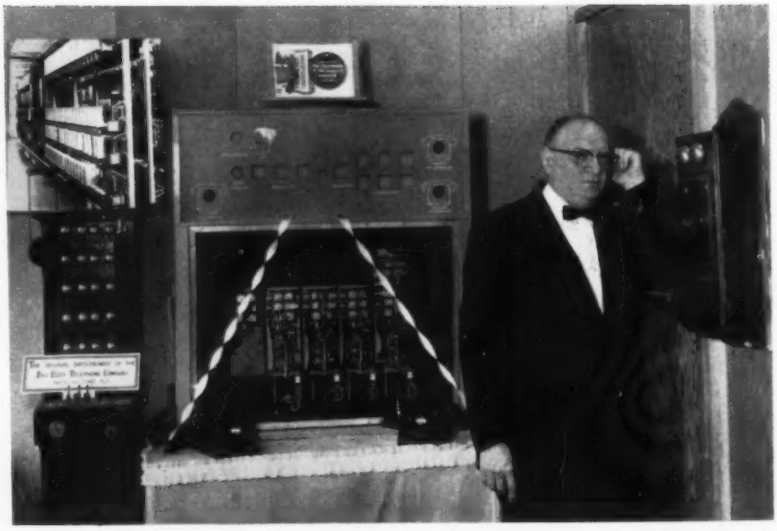
The Big Eddy Telephone Co., with headquarters at Narrowsburg, N. Y., is getting ready to convert to automatic operation. More than this, the company has done its own financing, selling 5½ per cent cumulative preferred stock to the public without help from underwriters or brokers.

The company, which serves a progressive farming and resort area with a network of some 1,500 magneto telephones from exchanges at Narrowsburg and at Beach Lake and Galilee in Pennsylvania, is now making plans to convert to Strowger automatic operation. Displays in store windows and public buildings, speeches before civic groups, news stories in area papers and on radio programs, are among the publicity techniques used by company officials to sell stock direct to investors.

Present plans call for installation of 500 lines. A new telephone building is being constructed at Narrowsburg to house the exchange for that city, and to provide a general business office for the over-all system.

The company gets its vigorous sounding name from the "Big Eddy," a name the pioneers gave to the widest and deepest point above tide of the nearby Delaware River. The Big Eddy Telephone Co. dates from the turn of the century when it installed a 14-mile circuit linking Narrowsburg and Honesdale.

Officers of the company are President Arthur N. Meyers; Vice President Arthur Seifried; Secretary and Treasurer L. G. Gebhart; General Manager Willard C. Dillmuth, and Director James Card.



Arthur N. Meyers, president of the Big Eddy Telephone Co., uses old type wall telephone, many of which are still in service on his network. Alongside is a display used in helping to sell stock to finance the company's future improvement and expansion program. Included is original switchboard used by the company, with photo of a modern automatic exchange pictured above. In the center is a working demonstration unit designed to acquaint public with equipment required for dial telephone service.

NOW YOU CAN BUZZ THROUGH WET CABLE SECTIONS AND NOT HAVE TO TEST FROM FIELD AND OFFICE ENDS

MURPHY BUZZER RELAY SET (BR-1)

To increase the usefulness of the famous Murphy Cable Tester, the new Buzzer Relay Set gives you a dependable, economical way of "buzzing thru" wet cable sections over a greater resistance without having to add too many batteries.

The BR-1 will buzz thru a loop resistance of 0 to 1000 ohms. Only one 4½ volt battery is used in the set and it is enclosed in a cabinet with a special "balanced armature" relay. Dimensions of the Murphy Buzzer Relay Set are 3½x6x3 inches. It is shipped complete with a pair of water proof cords for connecting to the Murphy Cable Tester, and a heavy duty 4½ volt battery.

Write for prices and additional information.

Order your new Model VC Test Cords for use with Murphy Cable Tester. Made of high quality, extremely flexible, test wire, they're insulation tested at 20,000 volts . . . assure no "leakage" readings.

MURPHY ELECTRONIC RESEARCH DEVELOPMENT MANUFACTURE
ENGINEERING LABORATORIES, Inc.

4419 Tulsa • Houston 24, Texas

Cadwell Retires From AE International

Charles S. Cadwell has retired as president of Automatic Electric International at his own request for reasons of health.

He has been succeeded by Gene K. Beare, formerly vice president in charge of production of Automatic

C. S. CADWELL

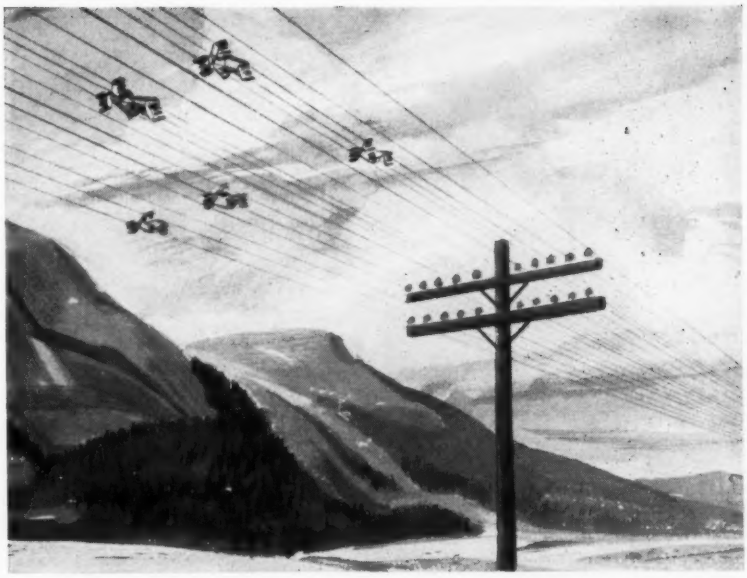
Electric Co. Mr. Beare has been succeeded by Robert J. Gressens, manager of the Industrial Products Division.

In announcing these executive changes, President Donald C. Power of General Telephone Corp., the parent

G. K. BEARE

company, stated that although Mr. Cadwell is recovering satisfactorily from a recent coronary attack, his doctors have advised that he should not look forward to resuming the heavy work load and extensive travel that the presidency of Automatic Electric International entails.

Mr. Cadwell will continue as a di-



MID-SPAN TRANSPOSITIONS...

easily, accurately and economically installed

with Case aluminum span-point brackets

The Case span-point transposition bracket now makes it possible to transpose communication wires at any point of the line **between poles**, regardless of pole spacing ...eliminates the need for special transposition poles. This lightweight (only 3½ lbs. complete with insulators and bushings) non-corrosive, ruggedly designed bracket features insulators that roll thus protecting wire insulation in stringing and reducing installation time. It is the **only** bracket designed **especially** for mid-span transpositions.

All Case transposition brackets come equipped with a special rubber bushing... in the event of glass insulator breakage, the line wire falls on the rubber bushing, with no loss of communication service.

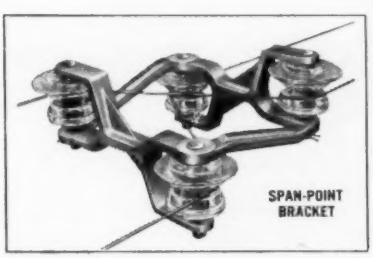
SOLD BY LEADING DISTRIBUTORS IN THE U. S.

CASE BRACKETS . . . STRONG, LONG-LASTING, ECONOMICAL, ESPECIALLY ADAPTED FOR CARRIER-CIRCUIT CONSTRUCTION

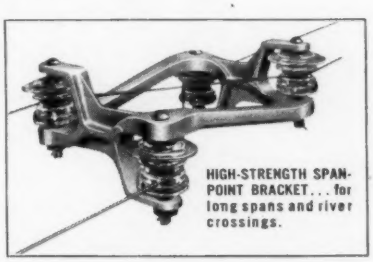
Write today for free illustrated brochure.

TRANSANDEAN ASSOCIATES, INC.

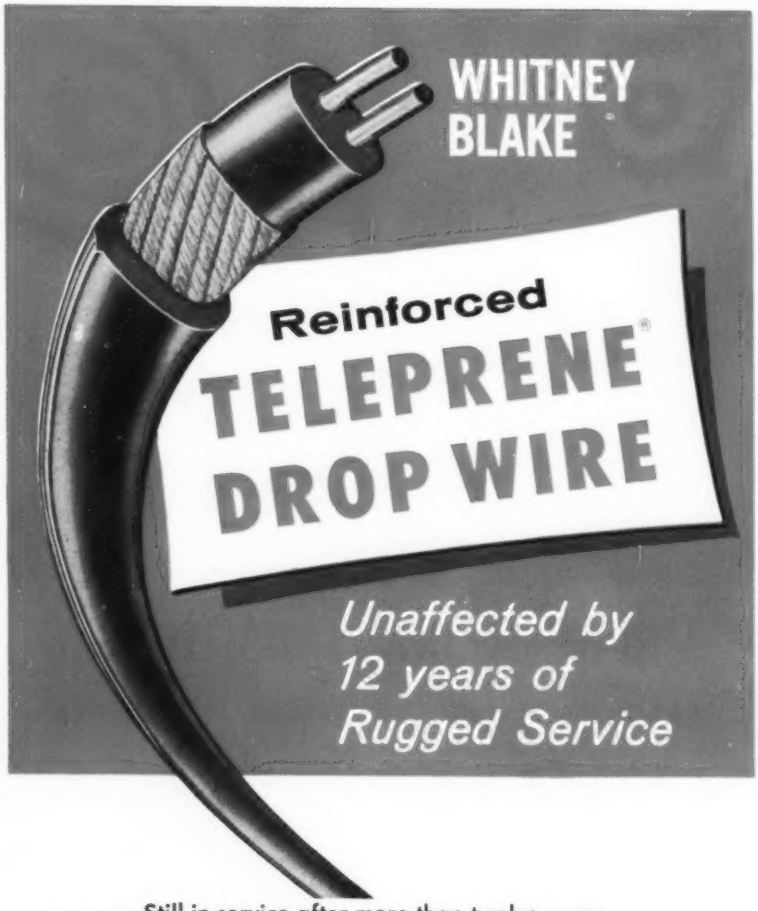
305 MAIN STREET, ORANGE, NEW JERSEY



SPAN-POINT BRACKET



HIGH-STRENGTH SPAN-POINT BRACKET... for long spans and river crossings.



Still in service after more than twelve years . . . that's the exceptional record of WB Reinforced TELEPRENE Drop Wire . . . and there's only one reason . . . quality. By cutting drop wire replacement to the bone with Reinforced TELEPRENE, Whitney Blake has proved that even if you could get drop wire for nothing, unless it stands up as long as WB TELEPRENE, service calls and replacements would cost you more.

INDEPENDENT

WB

This wire is REA approved

1-8

WELL BUILT WIRES SINCE 1899

WHITNEY BLAKE COMPANY

NEW HAVEN 14, CONNECTICUT

rector of Automatic Electric Co., Automatic Electric International, and certain other affiliated companies, Mr. Power said, in order that these units of General Telephone may continue to receive the benefit of Mr. Cadwell's wide experience in the telephone industry.

Mr. Cadwell has been active in the affairs of Automatic Electric for over 35 years, serving in a wide range of capacities, including commercial and sales, technical and manufacturing. He

R. J. GRESSENS

was elected president of Automatic Electric Co. in 1947, and became president of Automatic Electric International in 1955.

Gene K. Beare, Mr. Cadwell's successor as president of Automatic Electric International, entered the telephone business by way of the Southwestern Bell Telephone Co. in St. Louis, Mo. He joined Automatic Electric in 1939 as assistant to the president, was named commercial manager of affiliated companies in 1946, general commercial manager in 1947, production manager in 1948 and elected vice president in charge of production in 1954. He received his engineering degree from Washington University in St. Louis and his Masters in Business Administration from the Harvard Graduate School of Business Administration.

Robert J. Gressens, who now heads the manufacturing organization at Automatic Electric Co., received a liberal arts degree at Harvard University and an engineering degree at Illinois Institute of Technology. He joined the company in 1951, and after completing the company's training programs, served as Mr. Beare's executive assistant until 1956, when he was named manager of the Industrial Products Division.

Frank Davies Retires From General Directory

Frank Davies, chairman of the board of directors of General Telephone Directory Co., has announced that effective immediately he is retiring from active participation in the management of the company. However, he will continue as chairman of the board.

His immediate plans include enrolling at the University of Washington,

FRANK DAVIES

his alma mater, for study. He also intends to write articles, short stories, and possibly a history on the early days of the West.

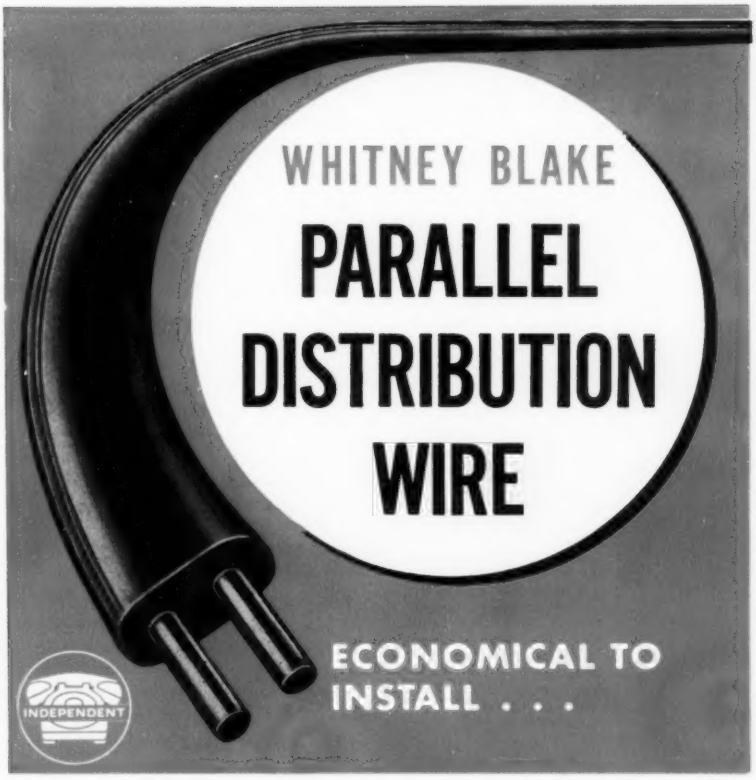
A long and successful career within the telephone industry has kept Mr. Davies occupied for nearly 40 years. On graduating from school in 1919 he became affiliated with Interstate Utilities Co., now General Telephone Co. of the Northwest.

From there, his long record of accomplishments led in 1936 to his being elected president of General Telephone Directory Co. upon its incorporation. He served in this capacity until 1956 when he was elected to the chairmanship of the firm.

"Frank Davies has pioneered many of the advances in the development of Yellow Page advertising," Wesley H. Loomis III, president of the directory company, stated. "Methods for which he helped to lay the ground work have become important to the industry, to the business community and to the general public."

Major milestones in Mr. Davies' career are many. After joining Interstate Utilities Co. nearly 40 years ago, he worked in various positions. In 1923 he was elected a director of the company and in 1926 treasurer. By 1929 he had advanced to assistant general manager of the firm.

When control of the firm was ac-

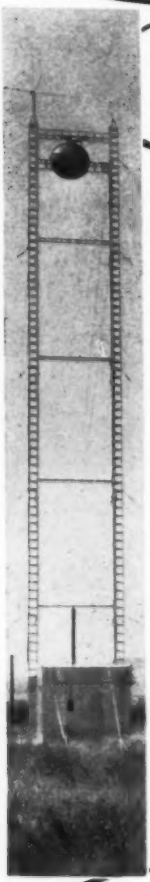


A minimum of labor is involved in installing WB Parallel Distribution Wire. It is ideally suited for long span construction. The high molecular weight polyethylene jacket is unaffected by adverse atmospheric conditions and also protects against transmission interference caused by tree branches, kite strings and other foreign objects falling across open wires.

WB Parallel Distribution Wire is made to the same high standards of quality that have maintained Whitney Blake leadership in the Independent Telephone Industry.

NEW HAVEN 14, CONNECTICUT

If it's TOWERS you need, check ROHN FIRST!



AMERICA'S FINEST COMMUNICATIONS TOWER OF ITS KIND . . . WITH EXCLUSIVE BUILT-IN ECONOMY

√ Reduce Costs

—by getting a tower *specifically for your* job. These towers are suitable for use up to 300 feet guyed—or self supporting to 50-60 ft.! ROHN towers are in daily use for micro-wave, radio and dozens of all type communications requirements throughout the U. S.—at big savings—yet more than do the job! Can be used for a multitude of jobs.

√ Proven design

—get full engineering data to prove superiority. Gleaming, hot-dipped galvanized finish available—stays shiny and new—no painting needed. Design fully tested—proved by thousands of installations. Easily shipped and inexpensively installed. Cross pieces form natural ladder for servicing.

√ Special Towers

—you're invited to submit your requirements. Towers will be built to your specifications if practical. Let us know your needs—ROHN can satisfy them BEST when it comes to towers of this type.

Illustrated here is a micro-wave installation of Rohn No. 40 tower for use by Public Service Company of Colorado for a state-wide communications system—one example of the thousands of ROHN towers now in use.

FREE

Send for new "Specifications & Price" catalog for Rohn Communications Towers. Your inquiry will receive prompt attention. Rohn representatives are coast-to-coast to serve you. Write—phone—wire

ROHN *Manufacturing Co.*

116 Limestone, Bellevue
Peoria, Illinois

"Pioneer Manufacturers of TV and Communication Towers of All Kinds."

quired that same year by Associated Telephone Utilities Co., a predecessor holding company of General Telephone Corp., he was transferred from Spokane to Los Angeles and placed on the staff of the operating vice president of the western companies.

During this period he dealt primarily with commercial and traffic assignments. In the next few years he worked at various administrative posts with Associated Telephone Co., Ltd. and Associated Telephone Utilities Co., Inc.

It was while serving as commercial operations engineer for the General Telephone System that on January 1, 1935 Davies was elected vice president of Tel-Ad Publishing Co., a forerunner of General Telephone Directory Co.

In his dual positions as commercial operations engineer for the system and as a vice president of Tel-Ad, Mr. Davies had the opportunity to formalize plans for a nationwide telephone directory publishing company.

It was his idea to expand Tel-Ad and to use the directories of the General Telephone System as the nucleus of this undertaking. He was designated as president-to-be of the company while it was in the process of being planned.

During his years at the helm of the directory company, he has seen it grow into an international organization with division offices in 10 centers in this country plus offices in Hawaii and the Philippines. It publishes directories and promotes the use of Yellow Page advertising for Independent telephone companies in about 4,500 communities.

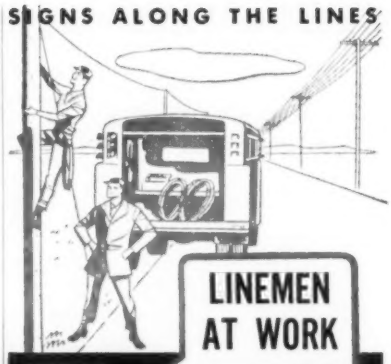
Mr. Davies was honored at a party earlier this month by members of the company.

Illinois Company Plans Microwave System

The Mississippi Valley Telephone Co. of Carthage, Ill., has announced that a $142,343 microwave carrier system will be a part of a four-phase over-all modernization and expansion program, which includes complete conversion to automatic operation. The initial order placed with Collins Radio Co. will be for equipment to operate eight voice channels and one teletypewriter chanchannel between Carthage and Dallas City, and 14 voice channels between Carthage and Hamilton.

Phase one, construction of buildings to house the equipment and construction of the microwave link connecting Carthage and Dallas City, a distance of 15.7 miles, is scheduled to begin immediately and completion is expected within six months. Phase two, the hop between Carthage and Hamilton, 10.5 miles, will be in operation six months following the completion of phase one.

SIGNS ALONG THE LINES



LINEMEN AT WORK

USING *Crapo* GALVANIZED GUY & MESSENGER STRAND

Positive strength and durability economies, combined with the superior qualities of steel, make *Crapo* Galvanized Steel Strand a rugged performer. The heavy, ductile, tightly-adherent galvanized coating — applied by the famous *Crapo* Process — provides dependable protection for the steel, prolongs the expectant life of the strand. There is a size and grade of *Crapo* Galvanized Strand for every practical need.

INDIANA STEEL & WIRE COMPANY, INC.
Muncie, Indiana

Best INSURANCE AGAINST POWER FAILURE...

KATOLIGHT EMERGENCY POWER PLANT

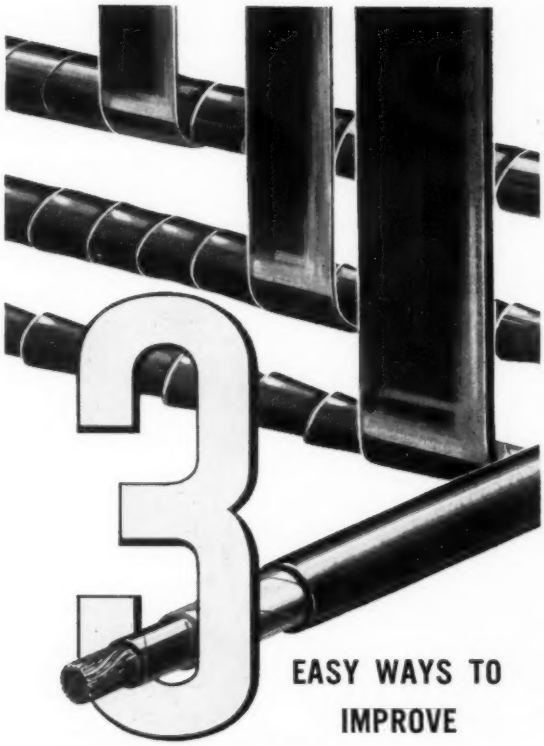
Gasoline, Gas or Diesel
Models to 500 KVA

We all agree that it is just good business to insure against unforseen losses due to fire, wind or accident. Of course insurance can cover loss of tangible property or personal liability—but none is available to replace loss of time, inconvenience, personal discomfort and danger that power failure can cause.

For the best form of power failure "insurance" you can depend on Katolight Power Plants to keep your most important electrical equipment functioning whether it be for 3 minutes or for 3 years. Katolight can provide a unit to fit your Telephone System's exact needs.

WRITE FOR NEW BROCHURE TODAY!

Katolight CORPORATION
Box 891-12 Mankato, Minnesota



3 EASY WAYS TO IMPROVE YOUR PLASTIC CABLE SPLICING...WITH **BISHOP's** TAPE TRIO.

1. **FILL VOIDS IN SECONDS...BISHOP No. 125 Electrical Filler Tape.** A synthetic rubber compound, 1/8" thick, builds up insulation rapidly, fuses in seconds. Easily molded by hand.

2. **PERMANENT MOISTURE BARRIER...BISHOP Bi-Seal, Type No. 2A (polyethylene-based).** Self-bonding, fuses into solid mass. Excellent chemical, mechanical and thermal properties. Unexcelled for cold weather applications (as low as -55° C).

3. **TOUGH, ABRASION-RESISTANT COVERING... BISHOP Vinyl Electrical Tapes.** Thin, (.007 and .010), tough, pressure-sensitive tapes, highly resistant to sun, water, oil, acids, alkalies and corrosive chemicals.

BISHOP'S Tape Trio accepted by REA as per REA Standard PC-2 and PC-3

For complete information see your telephone supply distributor or write for Bishop Catalog.

BISHOP

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MANUFACTURING CORPORATION

12 Canfield Rd., Cedar Grove, N. J.

BISHOP... MORE THAN A CENTURY OF ELECTRICAL INSULATION

What's in a name?

What is it that gives fame
to an organization —
or a business —
or a profession?

Gustav Hirsch
and his organization
have been engaged in the
telephone business
for over 57 years,
within the United States
and
many foreign countries —

Its personnel and management
has served the Nation
and
telephone companies operating
millions of stations —

Their services are
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Always at your service

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Write or wire if you desire to avail yourself of our service, or make a personal contact.

LYNCH B500 "O" type CARRIER TELEPHONE SYSTEMS

now in current production

TERMINALS
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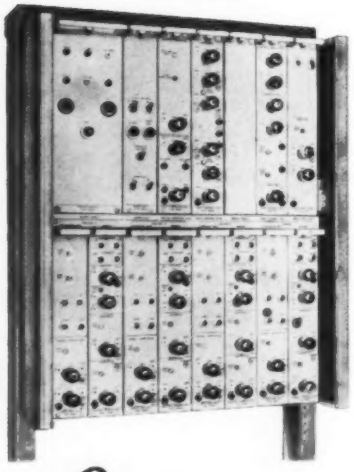
REPEATERS
FOR ALL
ALLOCATIONS

OA
OB
OC
OD

The Lynch B-500 "O" System coordinates fully with W. E. Co. "O" Carrier Systems, uses the same frequency assignments, has similar alarm facilities. The B-500 features self-synchronizing, twin-channel terminals, has built-in compandors which are not temperature sensitive.

Complete system testing and pre-set adjustments at factory make it possible for equipment to be cut into service the same day it is received.



Signaling options . . .

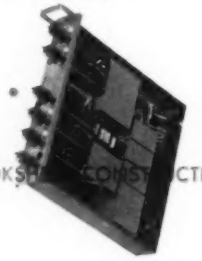
Complete signaling flexibility is assured by positive plug-in units. The following arrangements are available:

(1)—DIAL with E and M leads.

(2)—DIAL with A and B leads.

(3)—A. C. RINGDOWN

(4)—Speech-plus telegraph facilities available with any of the above.



BOOKS... CONSTRUCTION

Lynch TELEPHONE SYSTEMS

LYNCH CARRIER SYSTEMS INC.
SAN FRANCISCO, CALIF.

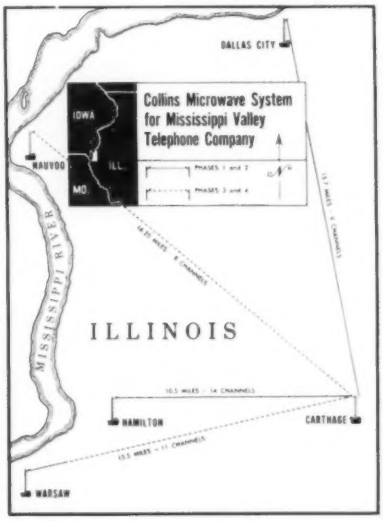
Distributed by GraybaR ELECTRIC COMPANY

CANADIAN DISTRIBUTORS Northern Electric COMPANY LIMITED

EXPORT... PHILIPS EXPORT COMPANY
DIVISION OF NORTH AMERICAN PHILIPS COMPANY INC.

The microwave just purchased covers phases one and two.

Mississippi Valley's tentative plans are to place in operation 11 voice channels between Carthage and Warsaw, 15.5 miles, in phase three. Phrase three construction is scheduled to be finished eight months after the completion of phase two. Phase four will place eight voice channels in operation between Carthage and Nauvoo, 16.25 miles, eight months after the completion of phase three.



Replacement of open wire lines by microwave radio transmission under the four-phase program will provide improved service for 3,711 of the current 4,645 telephones served by the company. Mississippi Valley officials indicated the inside modernization program will proceed in approximately the same steps as the outside construction plan, and that the automatic conversion and microwave installations would be fully completed during 1960.

The Collins radio frequency equipment to be used in the system operates in the 6,200 megacycle common-carrier band. Hot standby equipment will be provided to assure the highest degree of system reliability. In Collins microwave radio frequency equipment, automatic switching from main to standby is inherent in the radio frequency system with manual switching also provided. Squelch, provided at each station, will prevent noise from saturating the system in the event of a deep fade or path failure. This equipment incorporates a dual regulator which receives the composite baseband signal and maintains a fixed output level for a plus or minus 6 decibels variation of input signal. A service channel operating independently from the carrier drops will be included to facilitate

maintenance procedures and adjustments.

The microwave carrier equipment will utilize a high-density carrier system. Each separate communication path will have a usable spectrum space of about 3,600 cycles. The upper portion of the spectrum will provide space for a 3,400 cycles per second signal, which will be the agency for transmitting telephone ringing signals over the microwave.

Twelve channels will be formed into a base group, beginning at 60 kilocycles and extending to 108 kilocycles with each channel occupying a 4-kilocycle bandwidth. The base group carrier frequencies will be 420, 468, 516, 564 and 612 kilocycles, and the channel carrier frequencies will range from 60 to 104 kilocycles at 4-kilocycle intervals. The 308-kilocycle frequency will be reserved for the pilot frequency used for system level control and frequency reference. The resulting five base groups, after modulation, will result in five group signals located in the spectrum between 312 and 552 kilocycles, each group being 48 kilocycles in bandwidth.

Kellogg Ends Sales Agreement With Panhandle

Kellogg Switchboard & Supply Co. announced on Jan. 27 discontinuance of its exclusive sales agreement with Panhandle Electric Co., Amarillo, Tex., for distribution of the Panhandle FM rural subscriber carrier.

Kellogg said this action was taken because its wire transmission development arm, Federal Telecommunication Electronics Laboratories at Palo Alto, Cal., has a fully-transistorized rural P-type subscriber carrier now under full field test.

Independent operators expressed such an interest in the prototype model displayed at the USITA convention, according to Kellogg officials, that the company decided to field test additional prototype under varied conditions in the operating field.

"This carrier is developed to employ telephone type components and transistorized circuits to satisfy the stringent requirements for dependability, miniaturization, reduced power consumption, simplified maintenance and low cost," Kellogg reports.

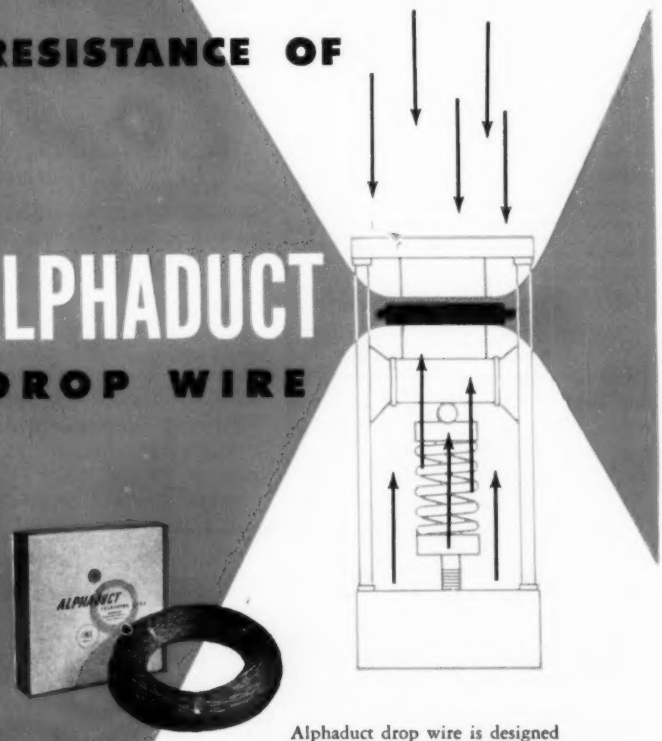
Power of Thought

"The great work of the present is the work of education. Let no man imagine that he has no influence. The man who thinks becomes a light and a power."—HENRY GEORGE.

1500 pounds

MINIMUM COMPRESSION RESISTANCE OF

ALPHADUCT DROP WIRE



Alphaduct drop wire is designed and built to be the longest lasting drop wire you've ever installed. It's tested . . . completely, thoroughly and often to make sure that every single coil is up to Alphaduct's rigid standards.

Here's how the insulation is tested to make sure it won't crush.

Short lengths of Alphaduct are placed between the steel plates of a compression testing machine. These plates are then forced together at uniform speed until the insulation crushes. Alphaduct parallel drop wire has to withstand a minimum load of 1500 pounds before it breaks. Each conductor of Alphaduct twisted pair will withstand a 1000 pound pressure.

You don't have to worry about a little rough handling breaking down this kind of tested insulation. Try Alphaduct drop wire. It's dated, so you can see for yourself the extra wear it provides.

ALPHADUCT WIRE AND CABLE COMPANY • NEW BRUNSWICK, N. J.

NATIONAL DISTRIBUTORS • AUTOMATIC ELECTRIC SALES CORP., NORTHLAKE, ILL.
LEICH SALES CORPORATION, CHICAGO, ILLINOIS

REGIONAL DISTRIBUTORS • PANKEY SUPPLY CO., CHARLOTTESVILLE, VA.
THE LINDSAY TELEPHONE SUPPLY CO., CLEVELAND, OHIO

Stromberg-Carlson Names Finance Supervisor

Ernest W. Stanton has been appointed regional supervisor in the Telephone Finance Department of Stromberg-Carlson, a division of General Dynamics Corp., according to an announcement by P. J. Lucier, manager of the Telephone Finance Department.

In his position Mr. Stanton will advise and serve telephone loan applicants from the Southeastern and Western states and Alaska—territories served from the Stromberg-Carlson branch offices in Atlanta and San Francisco, respectively.

A native Rochesterian, Mr. Stanton's background in finance, banking and selling has centered in Rochester companies and institutions, including the Lincoln Rochester Trust Co., Personal Finance Co., Hickok Mfg. Co., and Sibley, Lindsay & Curr Co.

Mr. Stanton attended Immaculate Conception School and Aquinas Institute in Rochester before joining the Naval Reserve and serving as an aviation machinist's mate in the United States, Hawaii and the Western Pacific from 1942 to 1946. Upon his return he attended Kent State University, Kent, O., and was graduated in 1950 with a

E. W. STANTON

Bachelor of Science degree in business administration.

He is a member of the American Institute of Banking, and has completed three AIB courses, including credit administration, principles of banking, and trust business.

Collins Radio Names Midwest Representative

The Central Region Sales Department of Collins Radio Co. announces the appointment of Richard H. Edwards as district representative in Ft. Wayne, Ind. Mr. Edwards will serve microwave users in his sales area covering Indiana, Michigan, Ohio, Kentucky and Tennessee.

Prior to Mr. Edwards' appointment, he served as an associate field engineer for Collins, and has been a licensed amateur for many years.

Mr. Edwards formerly was with Fairchild Graphic Equipment, Inc. for three years as sales engineer of electronic engraving machines. He has an extensive background in radio communication, having spent 14 years as flight radio officer and navigator with Pan American Airways, Arabian American Oil Co., and Overseas National Airways.

Safety Council Offers Management Course, Booklets

The National Safety Council announces that they will offer two sessions of a "Safety Management Techniques" training course for safety men.

The one-week course will be held from Feb. 24 to Feb. 28 in its first session and from May 19 to May 23 in its second session.

The course, for qualified safety men, is designed to improve skills in communication, human relations, and safety program planning.

Because...the B-4 does so much more

Telephone Companies

Will save many valuable dollars in time saving and in cost of materials . . . because

- Film projection transparencies for training departments can be made as easily as a paper copy and at a very low cost. A new, simple coloring method now available.
- Sharp, letter or legal size, black and white copies can be easily made from all types of originals, regardless of color of inks, single or double sided, in less than a minute right under fluorescent lights.
- With exclusive design for copying from books, only the one page being copied is inserted on the copy glass. This assures perfect contact and sharp copies.
- Inexpensive masters can be made for use on Blue Print or White Print machines.
- The B-4 photocopier was developed after years of study and research in the photocopy field to give you an "all purpose" copy machine.

The new B-4 Lumoprint "all purpose" copying machine

KwikKopy Co.
608 South Dearborn Street,
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Please send complete information on the new "all purpose" B-4 Lumoprint photocopy machine (No obligation).

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FOR ALL OF YOUR CENTRAL OFFICE AND PBX INSTALLATIONS, MODIFICATIONS, AND ENLARGEMENTS, IT'S THE
T. E. I.
TELEPHONE ELECTRONICS INSTALLATION CORP.
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CAN WE BE OF SERVICE TO YOU?

HARRIS-McBURNEY CO.
PUBLIC UTILITY CONSTRUCTION
A complete construction service for the telephone industry
Construction Crews Engineering
Station Installers Appraisals & Reports
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P. O. Box 267 Jackson, Michigan

Subjects covered will include psychology, photography, public speaking, conference leading and professional writing. A program clinic will also be included.

Information on enrollment can be obtained from the Director of Industrial Training, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Also available from the Safety Council are two new pamphlets on industrial safety and housekeeping.

"We Know Better" a color pamphlet, points out that although most workers know their jobs they often disregard good sense.

The other booklet, "Your Future . . . Keep It Clean," concentrates on housekeeping in the factory.

Single copies are available free by writing the Safety Council (address given above.) Quantity prices will also be quoted on request.

New Investment Needed

"A steady growth in savings must accompany sustained economic progress. If we are to maintain the value of the dollar and at the same time realize the great potentials of our economy, there must be a continuous flow of new investment funds from business and individual savings."—HOMER J. LIVINGSTON, *president, First National Bank of Chicago.*

Stable Currency

"One of the most difficult functions of a free government is to maintain a stable currency . . . more great nations have been overthrown by inflation than by invading armies or destructive bombs. A nation destroyed by a military force can rebuild itself but a nation where incentive of the individual is destroyed has very little opportunity of recovery."—EDWARD MARTIN, *U. S. Senator from Pennsylvania.*

ROBERT E. FOLEY CONSTRUCTION CORP.
DESIGN—SURVEYS—APPRAISALS—Construction and Maintenance of Overhead and Underground Telephone Plant. Complete supply of poles available for emergency requirements.
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Telephone Construction
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Phone OSborne 5-2267

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"Specializing in Telephone Construction"
Cable Splicers, Telephone Installers, Equipment Installers, Construction crews.
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Construction Crews Station Installers
Central Office Installations
Cable Splicers Complete Engineering
HENKELS & McCOY
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Now Operating in 30 States
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